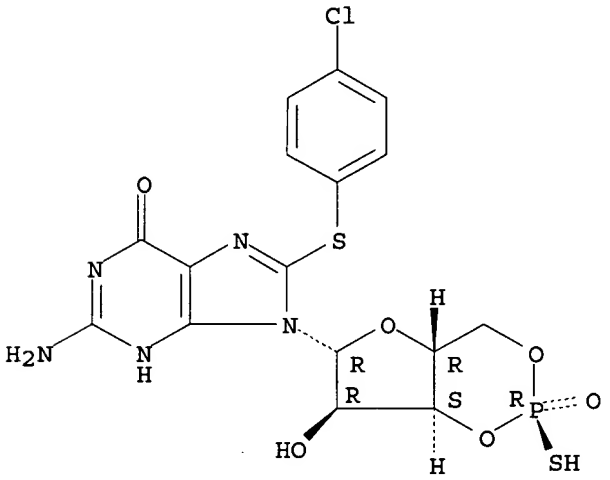
```
=> d his ful

     FILE 'REGISTRY' ENTERED AT 15:37:13 ON 04 JAN 2005
                  E CAMP/CN
L40               1 SEA ABB=ON  CAMP/CN
                  E RP-8-BR-CAMPS/CN
                  E RP 8 BR CAMPS/CN
L41               3 SEA ABB=ON  "RP 8"/CN

     FILE 'HCAPLUS' ENTERED AT 15:44:19 ON 04 JAN 2005
L42              47 SEA ABB=ON  RP-8-BR-CAMPS
L43               0 SEA ABB=ON  RP-8-BR-MONOBUTYRYL-CAMPS
L44               0 SEA ABB=ON  RP-MONOBUTYRYL-CAMPS
L45               0 SEA ABB=ON  RP-8-(W)4-CHLOROPHENYL-THIO(W)CAMPS
L46               0 SEA ABB=ON  RP-PIPERIDINO-CAMPS
L47               7 SEA ABB=ON  RP-8-CL-CAMPS
                  SELECT RN L42 1-47
                  SELECT RN L47 1-7

     FILE 'REGISTRY' ENTERED AT 15:47:22 ON 04 JAN 2005
L48             119 SEA ABB=ON  (142008-29-5/BI OR 60-92-4/BI OR 7440-70-2/BI OR ---etc.

     FILE 'HCAPLUS' ENTERED AT 15:48:51 ON 04 JAN 2005
L49              53 SEA ABB=ON  (L42 OR L47) AND L48
L50                 TRA L49 1-53 RN :      119 TERMS

     FILE 'REGISTRY' ENTERED AT 15:50:14 ON 04 JAN 2005
L51             119 SEA ABB=ON  L50
                    E RP-PIPERIDINO-CAMPS/CN
                    E PIPERIDINO-CAMPS/CN
                    E PIPERIDINOCAMPS/CN
L52               3 SEA ABB=ON (A)(129735-00-8 OR (D)153660-04-9 OR (F)142754-27-6)/RN
L53                 STRUCTURE 129735-00-8
L54           (B) 0 SEA SSS SAM L53
L55                 STR L53
L56           (C) 0 SEA SSS SAM L55
L57                 STR L55
L58           (E) 0 SEA SSS SAM L57

     FILE 'HCAPLUS' ENTERED AT 16:57:04 ON 04 JAN 2005
L59              77 SEA ABB=ON  L52 OR RP-8(W)(BR-CAMPS OR BR-MONOBUTYRYL-CAMPS OR
                    CL-CAMPS) OR RP(W)(?MONOBUTYRYL?-?CAMPS? OR ?PIPERIDINO?-?CAMPS
                    ?) 77 hits from CAplus using RN's for A, D, & F plus
                    text terms
     FILE 'HCAPLUS' ENTERED AT 17:00:38 ON 04 JAN 2005
L60                 TRA L59 1-77 RN :      352 TERMS

     FILE 'REGISTRY' ENTERED AT 17:00:46 ON 04 JAN 2005
L61             352 SEA ABB=ON  L60

     FILE 'HCAPLUS' ENTERED AT 17:00:53 ON 04 JAN 2005
L62              77 SEA ABB=ON  L59 AND L61
L63              43 SEA ABB=ON  L62 AND (PRD<19991028 OR PD<19991028)
                    43 hits with date limitation
```

Please see p. 3 of claims for names that correspond to letters, A-F. If this is too confusing, pls. call & I'll go over it with you. MJR

Searched by RN: A, D, & F

L52 ANSWER 1 OF 3 REGISTRY COPYRIGHT 2005 ACS on STN
RN **153660-04-9** REGISTRY
CN Guanosine, 8-[(4-chlorophenyl)thio]-, cyclic 3',5'-[hydrogen (R)-phosphorothioate] (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN 4H-Furo[3,2-d]-1,3,2-dioxaphosphorin, guanosine deriv.
CN Guanosine, 8-[(4-chlorophenyl)thio]-, cyclic 3',5'-(hydrogen phosphorothioate), (R)-
FS STEREOSEARCH
MF C16 H15 Cl N5 O6 P S2
CI COM
SR CA
LC STN Files: CA, CAPLUS, CHEMCATS, CSCHEM, TOXCENTER, USPATFULL
DT.CA CAplus document type: Journal; Patent
RL.P Roles from patents: BIOL (Biological study); PREP (Preparation); USES (Uses)
RL.NP Roles from non-patents: BIOL (Biological study); PRP (Properties); USES (Uses)

Absolute stereochemistry.

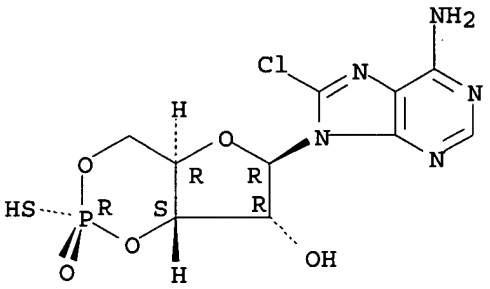


13 REFERENCES IN FILE CA (1907 TO DATE)
13 REFERENCES IN FILE CAPLUS (1907 TO DATE)
ED Entered STN: 16 Mar 1994

L52 ANSWER 2 OF 3 REGISTRY COPYRIGHT 2005 ACS on STN
RN **142754-27-6** REGISTRY
CN Adenosine, 8-chloro-, cyclic 3',5'-[hydrogen (R)-phosphorothioate] (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN 4H-Furo[3,2-d]-1,3,2-dioxaphosphorin, adenosine deriv.
CN Adenosine, 8-chloro-, cyclic 3',5'-(hydrogen phosphorothioate), (R)-
FS STEREOSEARCH
DR 143168-14-3
MF C10 H11 Cl N5 O5 P S
SR CA
LC STN Files: CA, CAPLUS, CHEMCATS, CSCHEM, TOXCENTER, USPATFULL
DT.CA CAplus document type: Journal; Patent
RL.P Roles from patents: BIOL (Biological study); PROC (Process); USES

(Uses)
RL.NP Roles from non-patents: BIOL (Biological study); PROC (Process); PRP (Properties); USES (Uses)

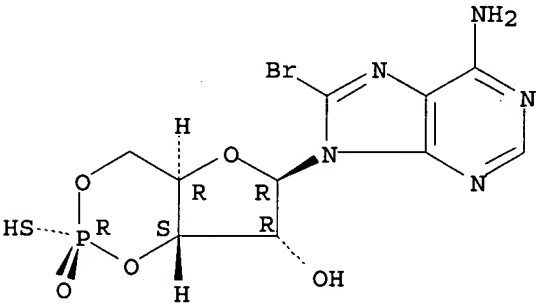
Absolute stereochemistry.



9 REFERENCES IN FILE CA (1907 TO DATE)
9 REFERENCES IN FILE CAPLUS (1907 TO DATE)
ED Entered STN: 31 Jul 1992

(A)
L52 ANSWER 3 OF 3 REGISTRY COPYRIGHT 2005 ACS on STN
RN **129735-00-8** REGISTRY
CN Adenosine, 8-bromo-, cyclic 3',5'-[hydrogen [P(R)]-phosphorothioate] (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN 4H-Furo[3,2-d]-1,3,2-dioxaphosphorin, adenosine deriv.
CN Adenosine, 8-bromo-, cyclic 3',5'-(hydrogen phosphorothioate), (R)-
FS STEREOSEARCH
MF C10 H11 Br N5 O5 P S
SR CA
LC STN Files: CA, CAPLUS, CHEMCATS, CSCHEM, TOXCENTER, USPATFULL
DT.CA CAplus document type: Journal; Patent
RL.P Roles from patents: BIOL (Biological study); PROC (Process); USES (Uses)
RL.NP Roles from non-patents: BIOL (Biological study); USES (Uses)

Absolute stereochemistry.

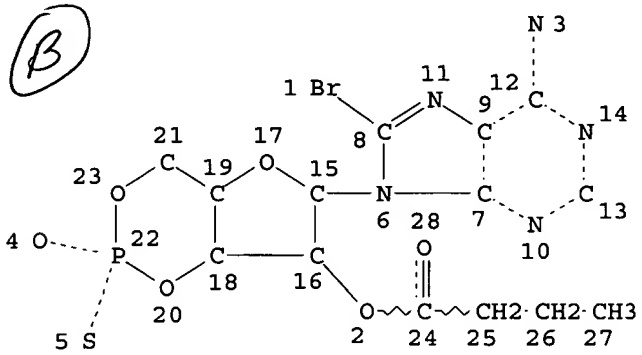


10 REFERENCES IN FILE CA (1907 TO DATE)
10 REFERENCES IN FILE CAPLUS (1907 TO DATE)
ED Entered STN: 05 Oct 1990

Searched by structure: B, C, & E

=> d l54
L54 HAS NO ANSWERS
L53 STR

(B)



0 hits from structure. See attached page from internet - CAS No pending

NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 28

STEREO ATTRIBUTES: NONE
L54 0 SEA FILE=REGISTRY SSS SAM L53

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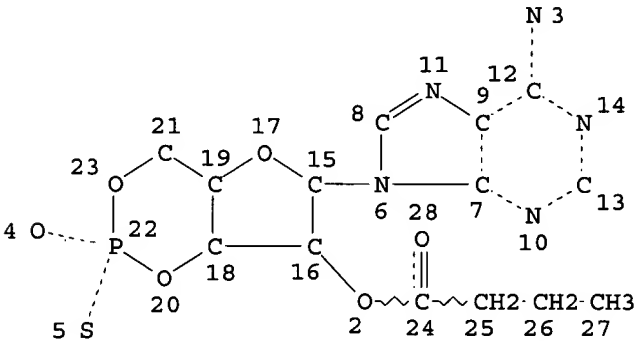
L55 HAS NO ANSWERS
L55 STR



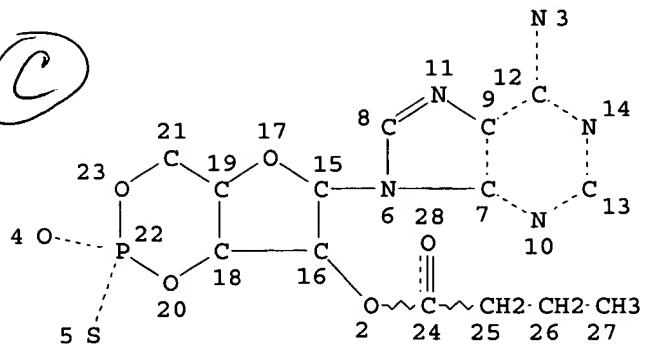
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 27

STEREO ATTRIBUTES: NONE

=> d l56
L56 HAS NO ANSWERS
L55 STR

C



0 hits from structure

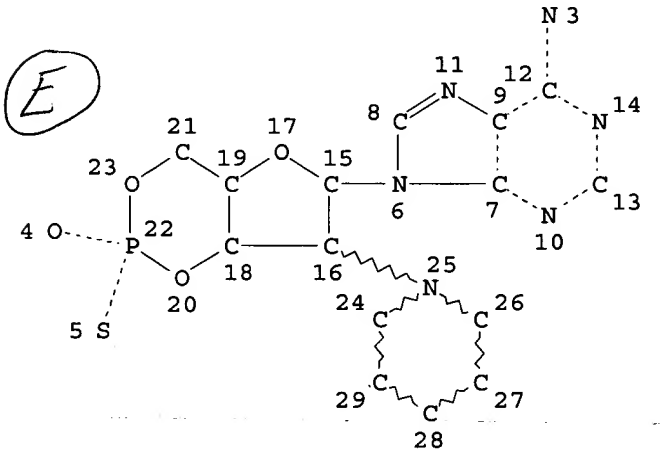
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 27

STEREO ATTRIBUTES: NONE
L56 0 SEA FILE=REGISTRY SSS SAM L55

=> d l57
L57 HAS NO ANSWERS
L57 STR

E



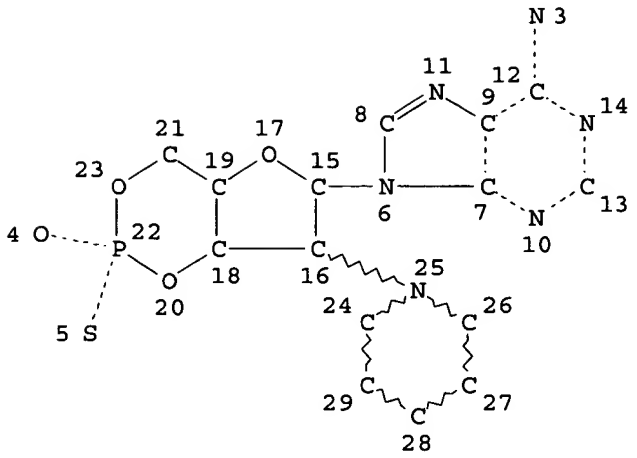
0 hits from structure

NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 27

STEREO ATTRIBUTES: NONE

=> d l58
L58 HAS NO ANSWERS
L57 STR



NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 27

STEREO ATTRIBUTES: NONE
L58 0 SEA FILE=REGISTRY SSS SAM L57

STIC Search Report
Biotech-Chem Library

STIC Database Tracking Number: 140781

TO: Karen A Lacourciere **Location: REM-2D19/2C18** **Art Unit: 1635** **Tuesday, January 04, 2005** **Case Serial Number: 09/428458**	**From: Mary Jane Ruhl** **Location: Biotech-Chem Library** **Remsen 1-A-62** **Phone: 571-272-2524** **maryjane.ruhl@uspto.gov**

Search Notes

Examiner Lacourciere,

Here are the results for your recent search request.

Please feel free to contact me if you have any questions about these results.

Thank you for using STIC services. We appreciate the opportunity to serve you.

Sincerely,

Mary Jane Ruhl
Technical Information Specialist
STIC
Remsen 1-A-62
Ext. 22524

140781 / 141715

~~140999~~

Access DB# _____

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Karen Lacourciere Examiner # : 77334 Date: Dec 20 2004
Art Unit: 1635 Phone Number ~~30~~ 2-0759 Serial Number: 09/428458
Mail Box and Bldg/Room Location: Rem 2D19 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: _____

Inventors (please provide full names): _____

_____

Earliest Priority Filing Date: 1997

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

Please search the highlighted compounds.

Thank you!

****

STAFF USE ONLY	Type of Search		Vendors and cost where applicable
Searcher: _____	NA Sequence (#)_____		STN _____
Searcher Phone #: _____	AA Sequence (#)_____		Dialog _____
Searcher Location: _____	Structure (#) _____		Questel/Orbit _____
Date Searcher Picked Up: _____	Bibliographic _____		Dr.Link _____
Date Completed: _____	Litigation _____		Lexis/Nexis _____
Searcher Prep & Review Time: _____	Fulltext _____		Sequence Systems _____
Clerical Prep Time: _____	Patent Family _____		WWW/Internet _____
Online Time _____	Other _____		Other (specify)_____

PTO-1590 (8-01)

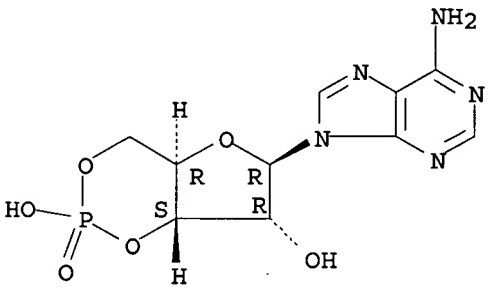
=> d ibib abs ind hitstr l39 1-3

L39 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1999:90638 HCAPLUS
DOCUMENT NUMBER: 130:251109
TITLE: Increased activation of protein kinase A type I contributes to the T cell deficiency in common variable immunodeficiency
AUTHOR(S): **Aukrust, Pal**; **Aandahl, Einar Martin**; **Skalhegg, Bjorn S.**; Nordoy, Ingvild; **Hansson, Vidar**; **Tasken, Kjetil**; **Froland, Stig S.**; **Muller, Fredrik**
CORPORATE SOURCE: Medical Department A, Section of Clinical Immunology and Infectious Diseases and Research Institute for Internal Medicine, Rikshospitalet, Oslo, N-0027, Norway
SOURCE: Journal of Immunology (1999), 162(2), 1178-1185
CODEN: JOIMA3; ISSN: 0022-1767
PUBLISHER: American Association of Immunologists
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The mol. mechanisms underlying the T cell dysfunction often present in common variable immunodeficiency (CVI) are not established. cAMP-dependent protein kinase A type I (PKAI) is an important inhibitor of T cell proliferation after Ag stimulation. We therefore investigated the possibility that activation of PKAI may be involved in the development of T cell dysfunction in CVI. An exogenously added PKAI-selective antagonist (Rp-8-Br-cAMPS) induced a significant increase in anti-CD3-stimulated PBMC proliferation in 20 CVI patients compared with no effect in 15 controls. Purified T cells from 7 CVI patients with strictly defined T cell deficiency had elevated endogenous cAMP levels compared with controls. Treatment of T cells from these CVI patients with Rp-8-bromo-cAMP-phosphorothioate markedly improved anti-CD3-stimulated proliferation (up to 3.7-fold), particularly in CD4+ lymphocytes, reaching proliferation levels comparable to control values. No effect of cAMP antagonist on T cell proliferation was seen in controls. In these CVI patients, cAMP antagonist also increased IL-2 production in anti-CD3-stimulated T cells. However, exogenously added IL-2 at concns. comparable to the achieved increase in IL-2 levels after addition of cAMP antagonist had no effect on T cell proliferation. Furthermore, the stimulatory effects of exogenously added IL-2 at higher concns. and cAMP antagonist on T cell proliferation were additive. Our findings indicate that increased PKAI activation may be an important mol. basis for the T cell defect in CVI and suggest that the cAMP/PKAI system may be a potential mol. target for immunomodulating therapy in these patients.
CC 15-8 (Immunochemistry)
ST protein kinase A T lymphocyte deficiency common variable immunodeficiency
IT Immunoglobulins
(acquired hypogammaglobulinemia; increased activation of protein kinase A type I contributes to the T cell deficiency in common variable immunodeficiency)
IT CD4-positive T cell
T cell (lymphocyte)
(increased activation of protein kinase A type I contributes to the T cell deficiency in common variable immunodeficiency)
IT Interleukin 2
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(increased activation of protein kinase A type I contributes to the T cell deficiency in common variable immunodeficiency in relation to)

IT **142008-29-5**, CAMP-dependent Protein kinase A
RL: ADV (Adverse effect, including toxicity); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(increased activation of protein kinase A type I contributes to the T cell deficiency in common variable immunodeficiency)
IT **60-92-4**, CAMP
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(increased activation of protein kinase A type I contributes to the T cell deficiency in common variable immunodeficiency in relation to)
IT **142008-29-5**, CAMP-dependent Protein kinase A
RL: ADV (Adverse effect, including toxicity); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(increased activation of protein kinase A type I contributes to the T cell deficiency in common variable immunodeficiency)
RN 142008-29-5 HCAPLUS
CN Kinase (phosphorylating), protein, A (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **60-92-4**, CAMP
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(increased activation of protein kinase A type I contributes to the T cell deficiency in common variable immunodeficiency in relation to)
RN 60-92-4 HCAPLUS
CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1998:719272 HCAPLUS
DOCUMENT NUMBER: 130:490
TITLE: Use of compounds inhibiting cAMP-dependent protein kinase A as immunomodulating agents for treating immunosuppressive diseases
INVENTOR(S): **Tasken, Kjetil; Aandahl, Einar Martin; Aukrust, Pal; Skalhegg, Bjorn S.; Muller, Fredrik; Froland, Stig; Hansson, Vidar**
PATENT ASSIGNEE(S): Norway
SOURCE: PCT Int. Appl., 56 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent

LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
WO 9848809	A1	19981105	WO 1998-NO134		19980429
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM					
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG					
CA 2288215	AA	19981105	CA 1998-2288215		19980429
AU 9870865	A1	19981124	AU 1998-70865		19980429
AU 738674	B2	20010920			
EP 1024809	A1	20000809	EP 1998-917808		19980429
EP 1024809	B1	20020306			
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO					
JP 2002501499	T2	20020115	JP 1998-546856		19980429
NZ 501181	A	20020301	NZ 1998-501181		19980429
AT 213944	E	20020315	AT 1998-917808		19980429
PT 1024809	T	20020731	PT 1998-917808		19980429
ES 2171018	T3	20020816	ES 1998-917808		19980429
NO 9905269	A	19991213	NO 1999-5269		19991028
PRIORITY APPLN. INFO.:			NO 1997-1997	A	19970429
			WO 1998-NO134	W	19980429

AB Several compds. capable of inhibiting cAMP-dependent protein kinase A (PKA) are used to produce a medicament increasing T-cell proliferation in patients with immunosuppressive diseases. Inhibitors include cAMP analogs, ribozymes, antisense DNA, and peptides binding to the anchoring region of PKA. In T-cells from normal blood donors, TCR/CD3-stimulated T-cell proliferation was inhibited by a cAMP agonist (Sp-8-Br-cAMPS). This effect was almost completely reversed by increasing concns. of complementary antagonist (Rp-8-Br-cAMPS (I)). However, antagonist alone did not alter proliferation of normal T-cells. In contrast, when the TCR/CD3-induced proliferation of T-cells from a HIV-infected patient was investigated, I not only reversed the effect of the complementary agonist, but further increased the proliferation above the levels in untreated cells. When the effect of the antagonist alone was assessed in T-cells from HIV-infected patients, there was a concentration-dependent increase in TCR/CD3-induced proliferation that was more than 2-fold at higher concns. T-cells responding poorly to TCR/CD3 stimulation benefitted most from cAMP antagonist treatment.

IC ICM A61K031-52
ICS A61K048-00; A61K038-16; C12N009-12

CC 1-7 (Pharmacology)
Section cross-reference(s): 7, 13, 14, 15

ST protein kinase A inhibitor treatment immunodeficiency; T cell proliferation cAMP antagonist; immunosuppressive disease treatment protein kinase inhibition

IT Interleukin 2
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses) (CD3-induced T-cell proliferation response to cAMP antagonist in combination with; cAMP-dependent protein kinase A inhibitors as immunomodulating agents for treating immunosuppressive diseases)

IT Cell proliferation

(T cell, increasing; cAMP-dependent protein kinase A inhibitors as immunomodulating agents for treating immunosuppressive diseases)

IT CD3 (antigen)
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(TCR receptor complexes, cAMP agonist and antagonist effect on T-cell proliferation stimulated by; cAMP-dependent protein kinase A inhibitors as immunomodulating agents for treating immunosuppressive diseases)

IT Immunoglobulins
(acquired hypogammaglobulinemia; cAMP-dependent protein kinase A inhibitors as immunomodulating agents for treating immunosuppressive diseases)

IT Peptides, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(anchoring-disrupting; cAMP-dependent protein kinase A inhibitors as immunomodulating agents for treating immunosuppressive diseases)

IT AIDS (disease)
(cAMP-dependent protein kinase A inhibitors as immunomodulating agents for treating immunosuppressive diseases)

IT TCR (T cell receptors)
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(complexes, with CD3, cAMP agonist and antagonist effect on T-cell proliferation stimulated by; cAMP-dependent protein kinase A inhibitors as immunomodulating agents for treating immunosuppressive diseases)

IT Immunity
(disorder; cAMP-dependent protein kinase A inhibitors as immunomodulating agents for treating immunosuppressive diseases)

IT T cell (lymphocyte)
(elevated cAMP in, from HIV-infected humans; cAMP-dependent protein kinase A inhibitors as immunomodulating agents for treating immunosuppressive diseases)

IT Ribozymes
RL: BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(hammerhead; cAMP-dependent protein kinase A inhibitors as immunomodulating agents for treating immunosuppressive diseases)

IT Human immunodeficiency virus
(infection; cAMP-dependent protein kinase A inhibitors as immunomodulating agents for treating immunosuppressive diseases)

IT T cell (lymphocyte)
(proliferation, increasing; cAMP-dependent protein kinase A inhibitors as immunomodulating agents for treating immunosuppressive diseases)

IT Antisense oligonucleotides
RL: BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(sequence-specific; cAMP-dependent protein kinase A inhibitors as immunomodulating agents for treating immunosuppressive diseases)

IT **142008-29-5**, CAMP-dependent protein kinase A
RL: ADV (Adverse effect, including toxicity); BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(Type I; cAMP-dependent protein kinase A inhibitors as immunomodulating agents for treating immunosuppressive diseases)

IT **60-92-4**, CAMP
RL: BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(antagonists; cAMP-dependent protein kinase A inhibitors as immunomodulating agents for treating immunosuppressive diseases)

IT **143277-30-9 215597-64-1 215597-71-0**
215722-04-6
RL: BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(as anchoring-disrupting peptide; cAMP-dependent protein kinase A inhibitors as immunomodulating agents for treating immunosuppressive diseases)

IT **127634-20-2**
RL: ADV (Adverse effect, including toxicity); BSU (Biological study, unclassified); BIOL (Biological study)
(as cAMP agonist, TCR/CD3-stimulated proliferation of T-cells inhibition by; cAMP-dependent protein kinase A inhibitors as immunomodulating agents for treating immunosuppressive diseases)

IT **129735-00-8 129735-01-9 142754-27-6**
156816-36-3 215597-30-1 215597-33-4
RL: BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(as cAMP antagonist; cAMP-dependent protein kinase A inhibitors as immunomodulating agents for treating immunosuppressive diseases)

IT **215662-76-3 215662-77-4**
RL: BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(as hammerhead ribozyme; cAMP-dependent protein kinase A inhibitors as immunomodulating agents for treating immunosuppressive diseases)

IT **215662-78-5 215662-79-6**
RL: BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(as sequence-specific antisense nucleotide; cAMP-dependent protein kinase A inhibitors as immunomodulating agents for treating immunosuppressive diseases)

IT **951-77-9D**, analogs **951-78-0D**, analogs
RL: BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(stabilizing hammerhead ribozyme; cAMP-dependent protein kinase A inhibitors as immunomodulating agents for treating immunosuppressive diseases)

IT **142008-29-5**, CAMP-dependent protein kinase A
RL: ADV (Adverse effect, including toxicity); BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(Type I; cAMP-dependent protein kinase A inhibitors as immunomodulating agents for treating immunosuppressive diseases)

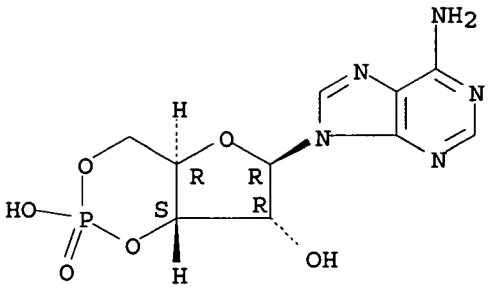
RN 142008-29-5 HCAPLUS
CN Kinase (phosphorylating), protein, A (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT **60-92-4**, CAMP
RL: BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(antagonists; cAMP-dependent protein kinase A inhibitors as immunomodulating agents for treating immunosuppressive diseases)

RN 60-92-4 HCAPLUS
CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

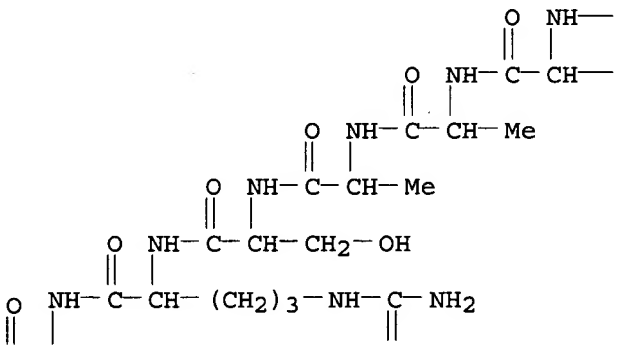


IT **143277-30-9 215597-64-1 215597-71-0**
215722-04-6
RL: BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(as anchoring-disrupting peptide; cAMP-dependent protein kinase A inhibitors as immunomodulating agents for treating immunosuppressive diseases)

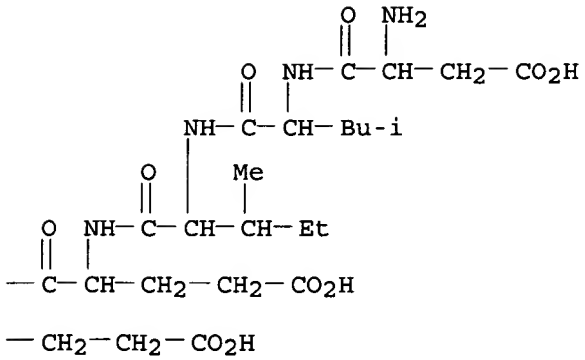
RN 143277-30-9 HCAPLUS

CN L-Tyrosine, L-α-aspartyl-L-leucyl-L-isoleucyl-L-α-glutamyl-L-α-glutamyl-L-alanyl-L-alanyl-L-seryl-L-arginyl-L-isoleucyl-L-valyl-L-α-aspartyl-L-alanyl-L-valyl-L-isoleucyl-L-α-glutamyl-L-glutaminyl-L-valyl-L-lysyl-L-alanyl-L-alanyl- (9CI) (CA INDEX NAME)

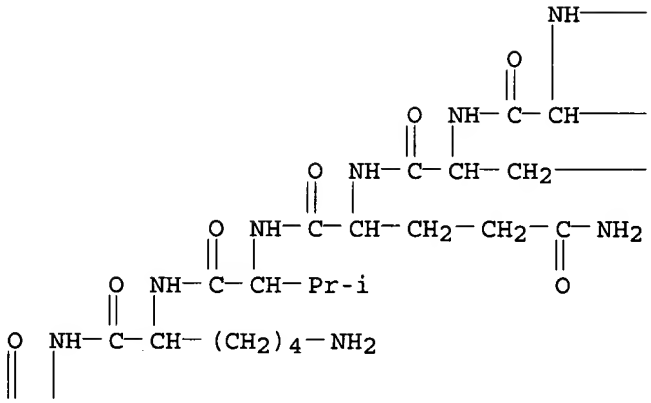
PAGE 1-B



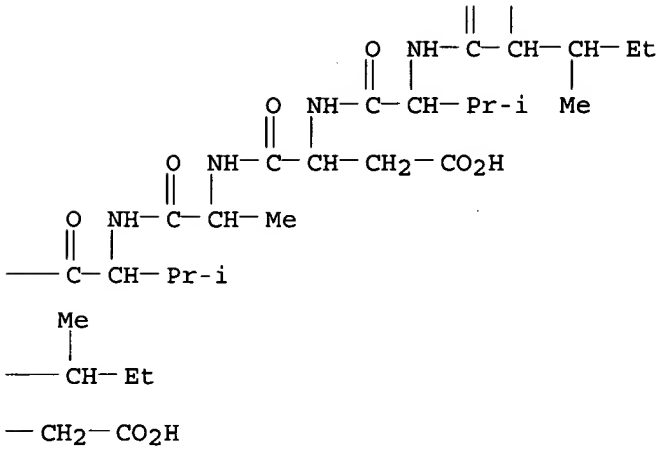
PAGE 1-C



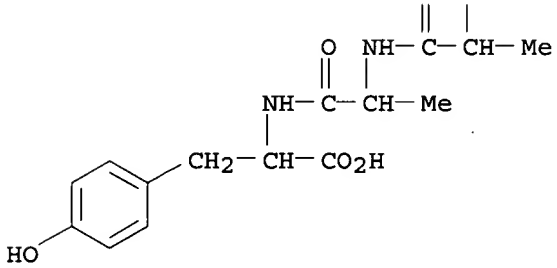
PAGE 2-A



PAGE 2-B



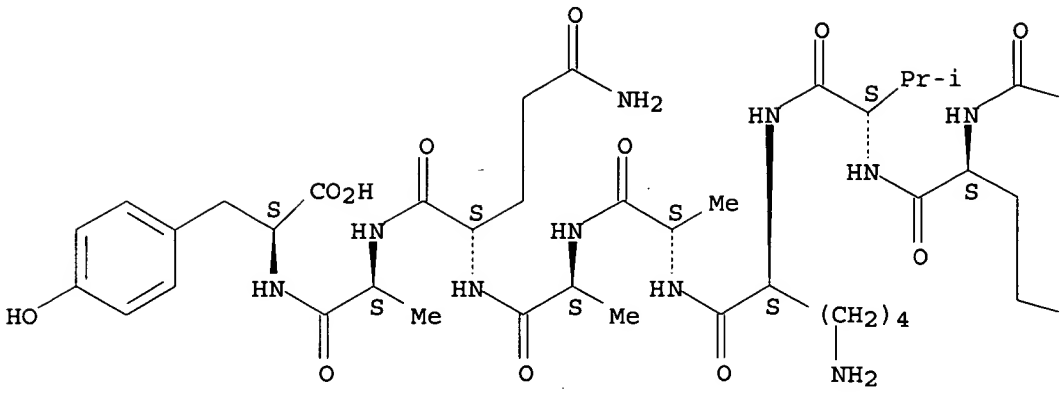
PAGE 3-A



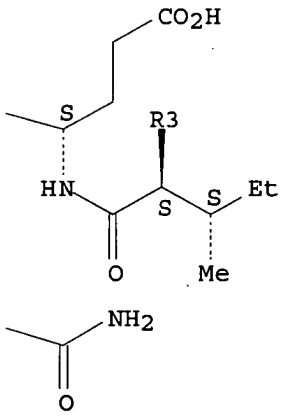
RN 215597-64-1 HCAPLUS
CN L-Tyrosine, L-α-aspartyl-L-leucyl-L-isoleucyl-L-α-glutamyl-L-α-glutamyl-L-alanyl-L-alanyl-L-seryl-L-arginyl-L-isoleucyl-L-valyl-L-α-aspartyl-L-alanyl-L-valyl-L-isoleucyl-L-α-glutamyl-L-glutaminyl-L-valyl-L-lysyl-L-alanyl-L-alanyl-L-glutaminyl-L-alanyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 1-B



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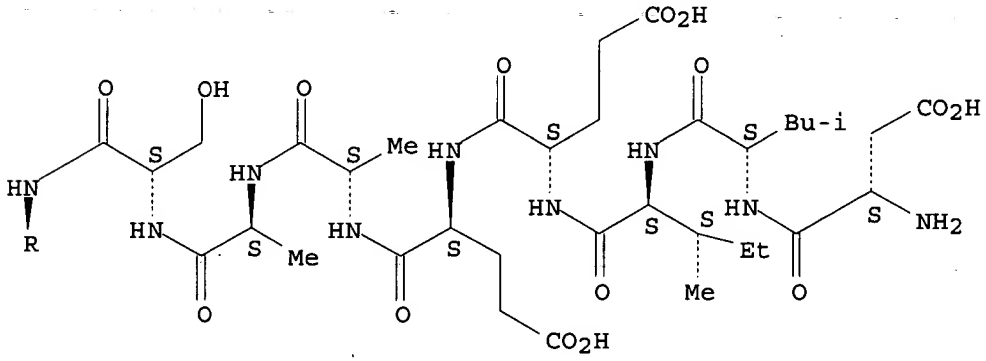

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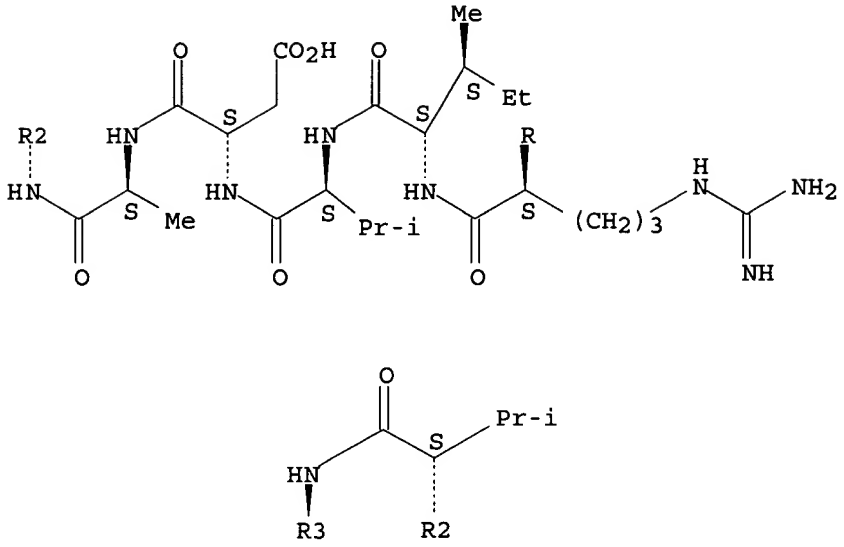
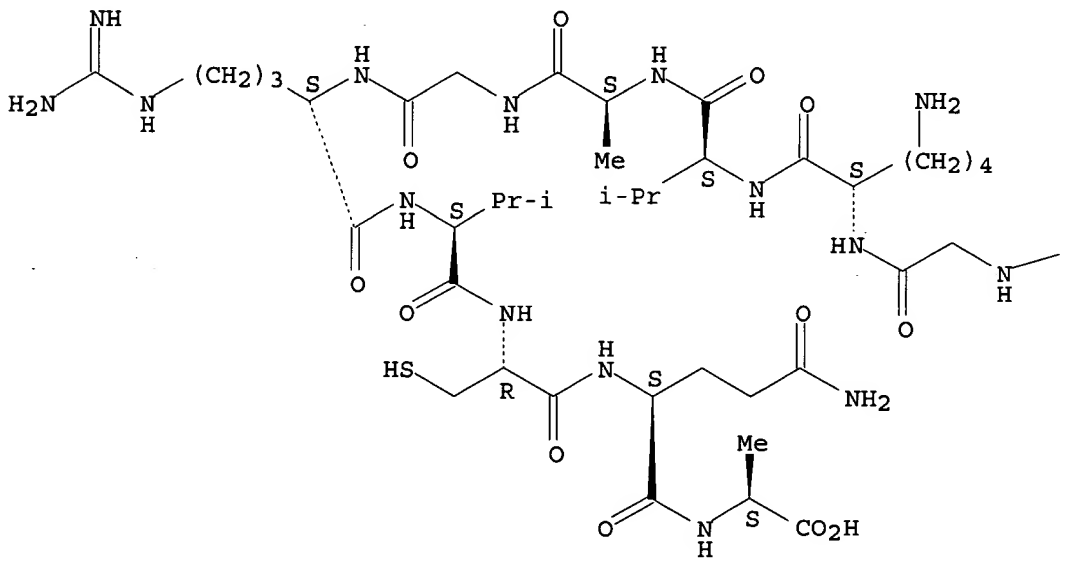


RN 215597-71-0 HCAPLUS
CN L-Alanine, L-glutaminyl-L-valyl-L-isoleucyl-L-seryl-L-α-glutamyl-L-alanyl-L-threonyl-L-glutaminyl-L-valyl-L-leucyl-L-alanyl-L-threonyl-L-threonyl-L-valylglycyl-L-lysyl-L-valyl-L-alanylglycyl-L-arginyl-L-valyl-L-cysteinyl-L-glutaminyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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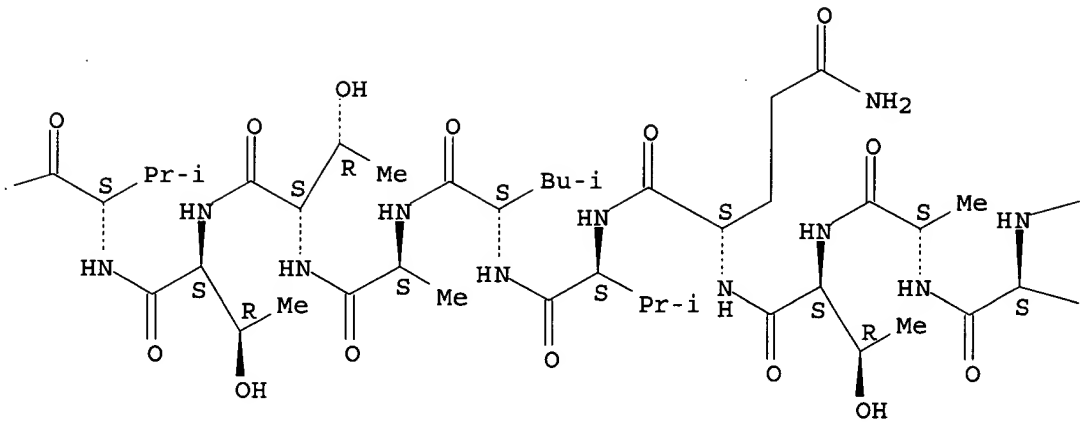

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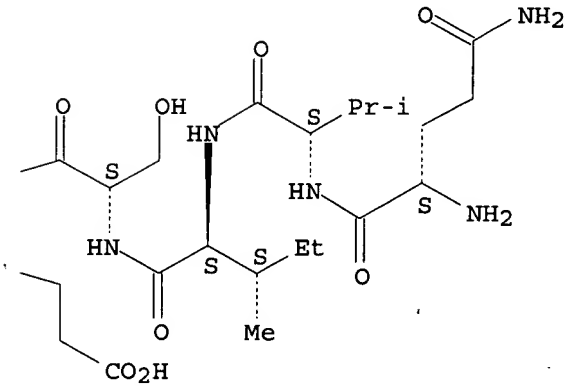


RN 215722-04-6 HCAPLUS
CN L-Leucine, L-valyl-L-glutaminylglycyl-L-asparaginyl-L-threonyl-L-α-aspartyl-L-α-glutamyl-L-alanyl-L-glutaminyl-L-α-glutamyl-L-α-glutamyl-L-leucyl-L-alanyl-L-tryptophyl-L-lysyl-L-isoleucyl-L-alanyl-L-lysyl-L-methionyl-L-isoleucyl-L-valyl-L-seryl-L-α-aspartyl-L-valyl-L-methionyl-L-glutaminyl-L-glutaminyl-L-alanyl-L-histidyl-L-histidyl-L-α-aspartyl-L-glutaminyl-L-prolyl-L-leucyl-L-α-glutamyl-L-lysyl-L-seryl-L-threonyl-L-lysyl- (9CI) (CA INDEX NAME)

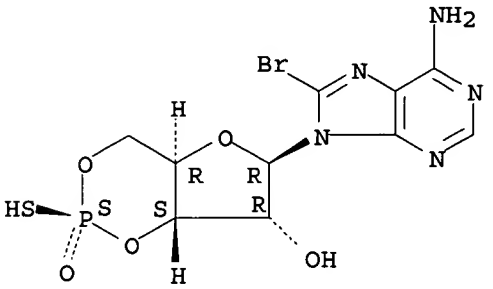
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **127634-20-2**
RL: ADV (Adverse effect, including toxicity); BSU (Biological study, unclassified); BIOL (Biological study)
(as cAMP agonist, TCR/CD3-stimulated proliferation of T-cells

inhibition by; cAMP-dependent protein kinase A inhibitors as immunomodulating agents for treating immunosuppressive diseases)

RN 127634-20-2 HCAPLUS

CN Adenosine, 8-bromo-, cyclic 3',5'-[hydrogen (S)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **129735-00-8 129735-01-9 142754-27-6 156816-36-3 215597-30-1 215597-33-4**

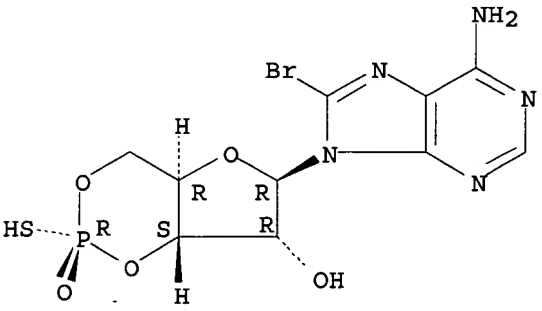
RL: BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)

(as cAMP antagonist; cAMP-dependent protein kinase A inhibitors as immunomodulating agents for treating immunosuppressive diseases)

RN 129735-00-8 HCAPLUS

CN Adenosine, 8-bromo-, cyclic 3',5'-[hydrogen [P(R)]-phosphorothioate] (9CI) (CA INDEX NAME)

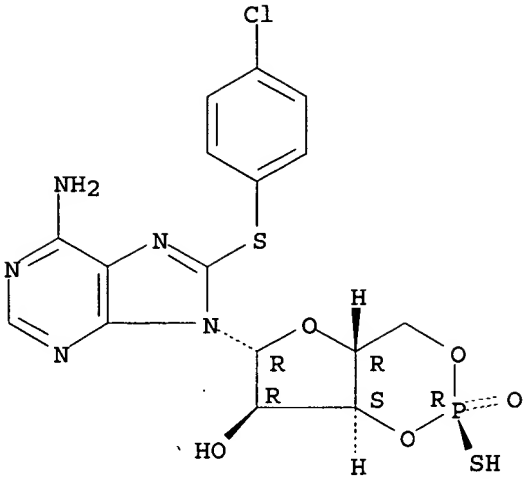
Absolute stereochemistry.



RN 129735-01-9 HCAPLUS

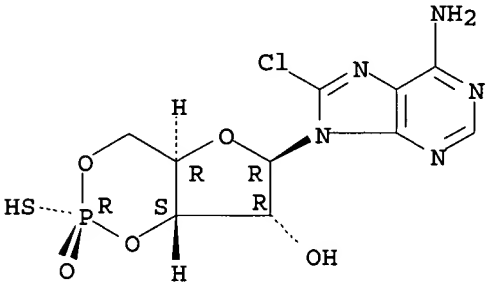
CN Adenosine, 8-[(4-chlorophenyl)thio]-, cyclic 3',5'-[hydrogen (R)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



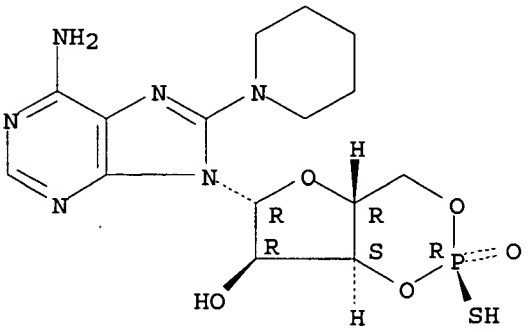
RN 142754-27-6 HCAPLUS
CN Adenosine, 8-chloro-, cyclic 3',5'-[hydrogen (R)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 156816-36-3 HCAPLUS
CN Adenosine, 8-(1-piperidinyl)-, cyclic 3',5'-[hydrogen (R)-phosphorothioate] (9CI) (CA INDEX NAME)

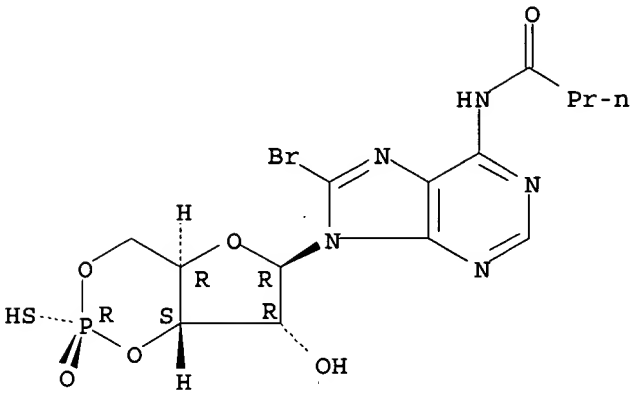
Absolute stereochemistry.



RN 215597-30-1 HCAPLUS
CN Adenosine, 8-bromo-N-(1-oxobutyl)-, cyclic 3',5'-[hydrogen

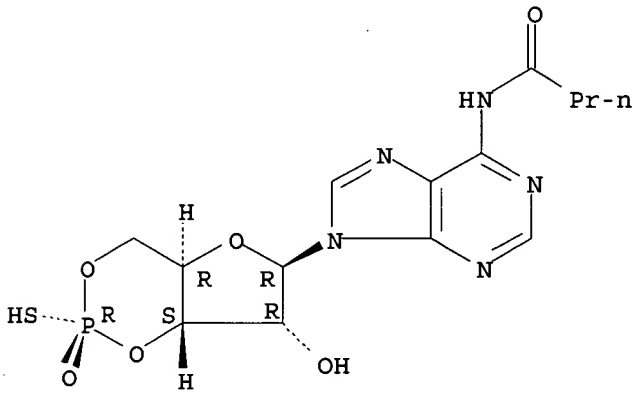
(R)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 215597-33-4 HCAPLUS
CN Adenosine, N-(1-oxobutyl)-, cyclic 3',5'-[hydrogen (R)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **215662-76-3 215662-77-4**
RL: BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(as hammerhead ribozyme; cAMP-dependent protein kinase A inhibitors as immunomodulating agents for treating immunosuppressive diseases)
RN 215662-76-3 HCAPLUS
CN RNA, (G-U-A-C-U-G-C-C-A-C-U-G-A-U-G-A-G-U-C-C-G-U-G-A-G-G-A-C-G-A-A-A-C-U-C-C-A-U-G) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 215662-77-4 HCAPLUS
CN RNA, (G-G-C-G-G-U-A-C-U-G-C-C-A-C-U-G-A-U-G-A-G-U-C-C-G-U-G-A-G-G-A-C-G-A-A-A-C-U-C-C-C-A-U-G-G-A) (9CI) (CA INDEX NAME)

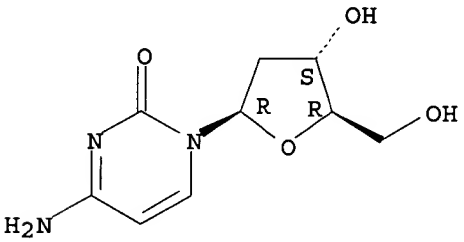
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **215662-78-5 215662-79-6**
RL: BPR (Biological process); BSU (Biological study, unclassified); PRP

(Properties); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(as sequence-specific antisense nucleotide; cAMP-dependent protein kinase A inhibitors as immunomodulating agents for treating immunosuppressive diseases)
RN 215662-78-5 HCAPLUS
CN DNA, d(G-T-A-C-T-G-C-C-A-G-A-C-T-C-C-A-T-G) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 215662-79-6 HCAPLUS
CN DNA, d(G-G-C-G-G-T-A-C-T-G-C-C-A-G-A-C-T-C-C-A-T-G-G-T) (9CI) (CA INDEX NAME)

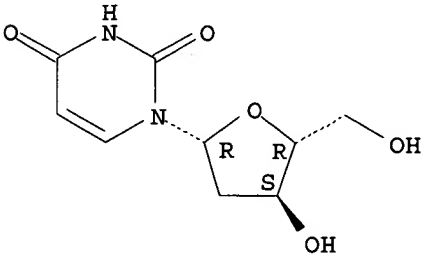
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **951-77-9D**, analogs **951-78-0D**, analogs
RL: BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(stabilizing hammerhead ribozyme; cAMP-dependent protein kinase A inhibitors as immunomodulating agents for treating immunosuppressive diseases)
RN 951-77-9 HCAPLUS
CN Cytidine, 2'-deoxy- (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



RN 951-78-0 HCAPLUS
CN Uridine, 2'-deoxy- (6CI, 8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L39 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1998:434799 HCAPLUS
DOCUMENT NUMBER: 129:170140
TITLE: Protein kinase A type I antagonist restores immune responses of T cells from HIV-infected patients

AUTHOR(S): **Aandahl, Einar Martin; Aukrust, Pal ; Skalhegg, Bjorn S.; Muller, Fredrik; Froland, Stig S.; Hansson, Vidar; Tasken, Kjetil**
CORPORATE SOURCE: Institute of Medical Biochemistry, University of Oslo, Oslo, N-0317, Norway
SOURCE: FASEB Journal (1998), 12(10), 855-862
CODEN: FAJOEC; ISSN: 0892-6638
PUBLISHER: Federation of American Societies for Experimental Biology
DOCUMENT TYPE: Journal
LANGUAGE: English
AB CAMP-dependent protein kinase A (PKA) type I has been established as an acute inhibitor of T cell activation. For this reason, we investigated the possible role of PKA type I in HIV-induced T cell dysfunction. T cells from HIV-infected patients have increased levels of cAMP and are more sensitive to inhibition by cAMP analog than are normal T cells. A PKA type I-selective antagonist increases the impaired proliferation of T cells from HIV-infected patients to normal or subnormal levels (up to 2.8-fold). Follow-up of patients after initiation of highly active antiretroviral treatment revealed that a majority of patients have a persistent T cell dysfunction that is normalized by incubation of T cells with Rp-8-Br-cAMPS. These observations imply that increased activation of PKA type I may contribute to the progressive T cell dysfunction in HIV infection and that PKA type I may be a potential target for immunomodulating therapy.
CC 1-5 (Pharmacology)
Section cross-reference(s): 15
ST PKA AIDS T lymphocyte activation cAMP
IT Cell activation
(T cell; protein kinase A type I antagonist restores immune responses of T cells from HIV-infected patients)
IT T cell (lymphocyte)
(activation; protein kinase A type I antagonist restores immune responses of T cells from HIV-infected patients)
IT AIDS (disease)
Anti-AIDS agents
Human immunodeficiency virus
Immunotherapy
T cell (lymphocyte)
(protein kinase A type I antagonist restores immune responses of T cells from HIV-infected patients)
IT **142008-29-5**, Protein kinase A
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(protein kinase A type I antagonist restores immune responses of T cells from HIV-infected patients)
IT **60-92-4**, CAMP
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(protein kinase A type I antagonist restores immune responses of T cells from HIV-infected patients)
IT **129735-00-8**
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(protein kinase A type I antagonist restores immune responses of T cells from HIV-infected patients)
IT **142008-29-5**, Protein kinase A
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(protein kinase A type I antagonist restores immune responses of T cells from HIV-infected patients)
RN 142008-29-5 HCAPLUS

CN Kinase (phosphorylating), protein, A (9CI) (CA INDEX NAME)

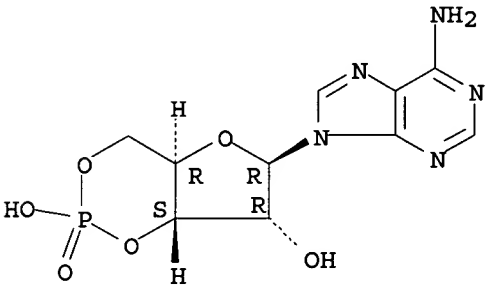
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT **60-92-4**, CAMP
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(protein kinase A type I antagonist restores immune responses of T cells from HIV-infected patients)

RN 60-92-4 HCAPLUS

CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

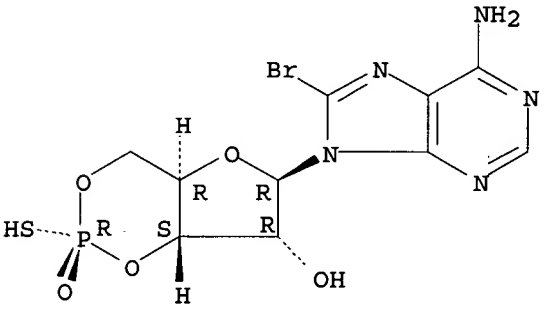


IT **129735-00-8**
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(protein kinase A type I antagonist restores immune responses of T cells from HIV-infected patients)

RN 129735-00-8 HCAPLUS

CN Adenosine, 8-bromo-, cyclic 3',5'-[hydrogen [P(R)]-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=>

=> d ibib abs hitstr l63 1-43

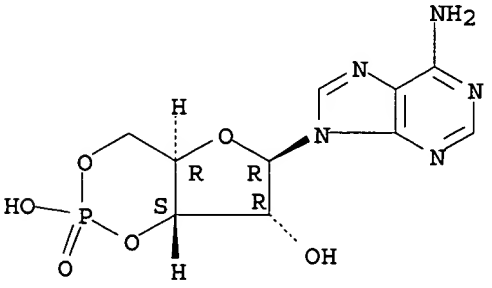
L63 ANSWER 1 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2000:908671 HCAPLUS
DOCUMENT NUMBER: 134:188314
TITLE: Effect of chemical analogues of cAMP and cGMP on hormone and growth factor secretion by porcine ovarian cells
AUTHOR(S): Sirotkin, A.; Makarevic, A.; Kotwica, J.; Genieser, H. G.; Bulla, J.
CORPORATE SOURCE: Research Institute of Animal Production, Nitra, Slovakia
SOURCE: Journal of Farm Animal Science (**1999**), 32, 11-14
CODEN: JFASFP; ISSN: 1335-3683
PUBLISHER: Vyskumny Ustav Zivocisnej Vyroby
DOCUMENT TYPE: Journal
LANGUAGE: Slovak

AB The aim of the authors' study was to examine the role of cAMP and cGMP in control of ovarian functions, as well as to understand the mechanisms of their action. The authors investigated the effects of cAMP analogs, N6-Phe-cAMP, Sp-5,6-DCI-cBIMPS (inhibitors of protein kinase A, PKA 1 nM) and of cGMP analogs, 8-pCPT-cGMP (activator of protein kinase G, PKG, 100 nM), Rp-8-pCPT-cGMPS, Rp-8-Br-cGMPS and Rp-8-Br-PET-cGMPS (inhibitors of PKG, 100 nM), on the release of progesterone (P), IGF-I and oxytocin (OT) by cultured porcine granulosa cells. It was found that both inhibitors of PKA significantly stimulated P and IGF-I release. N6-Phe-cAMP stimulated, while Sp-5,6-DCI-cBIMPS suppressed OT output. Both cGMP agonist and antagonists significantly activated P release and blocked IGF-I secretion. CGMP agonist, 8-pCPT-cGMP inhibited, cGMP antagonist Rp-8-pCPT-cGMPS stimulated, while other cGMP antagonists did not influence OT secretion. These observations suggest the involvement of both cAMP/PKA and cGMP/PKG-dependent intracellular mechanisms in control of steroid, nonapeptide hormone and growth factor release by porcine ovarian cells. Comparison of effects of cyclic nucleotide analogs with different action on PKA and PKG suggests that cAMP control P and IGF-I predominantly via PKA, but cGMP regulates ovarian secretory activity through receptors other than PKG. The potential usefulness of chemical cyclic nucleotide analogs for regulation of porcine reproduction is suggested.

IT **60-92-4**, CAMP **7665-99-8**, CGMP
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(chemical analogs of cAMP and cGMP effects on hormone and growth factor secretion by porcine ovarian cells)

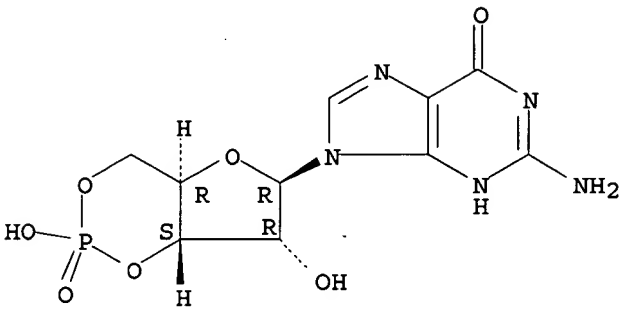
RN 60-92-4 HCAPLUS
CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



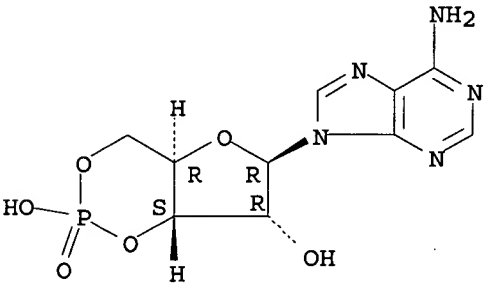
RN 7665-99-8 HCAPLUS
CN Guanosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



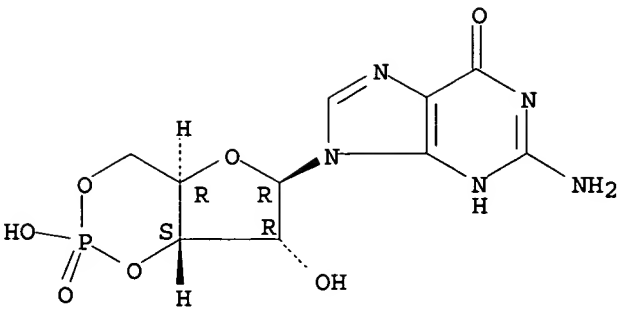
IT **60-92-4D**, CAMP, analogs **7665-99-8D**, CGMP, analogs
31319-80-9 54364-02-2 120912-54-1
150418-07-8 153660-04-9 172806-20-1
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(chemical analogs of cAMP and cGMP effects on hormone and growth factor secretion by porcine ovarian cells)
RN 60-92-4 HCAPLUS
CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



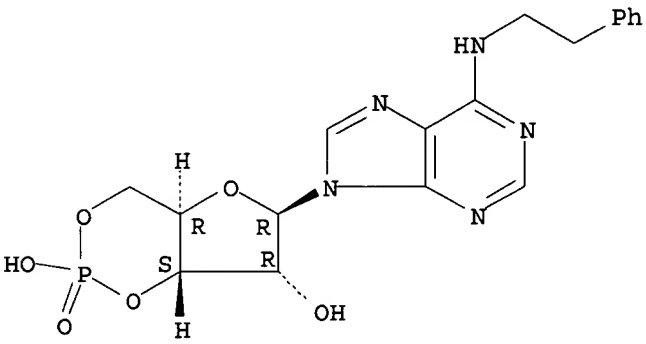
RN 7665-99-8 HCAPLUS
CN Guanosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



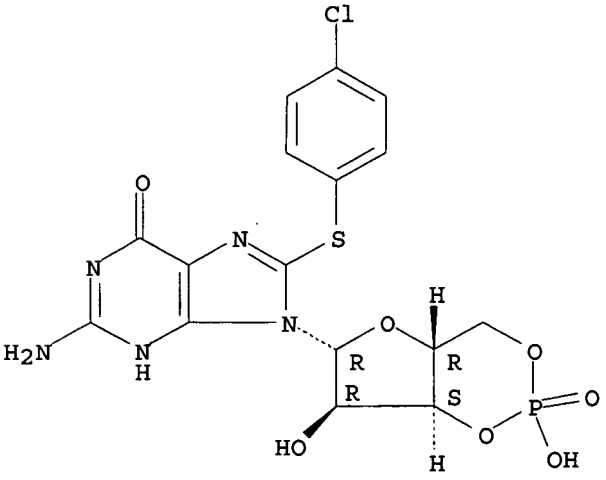
RN 31319-80-9 HCAPLUS
CN Adenosine, N-(2-phenylethyl)-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 54364-02-2 HCAPLUS
CN Guanosine, 8-[(4-chlorophenyl)thio]-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

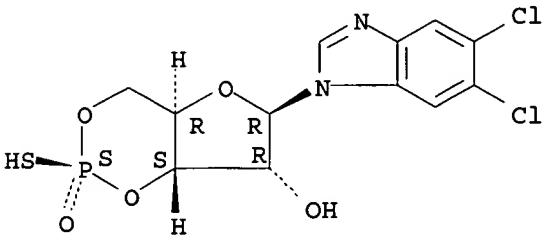
Absolute stereochemistry.



RN 120912-54-1 HCAPLUS

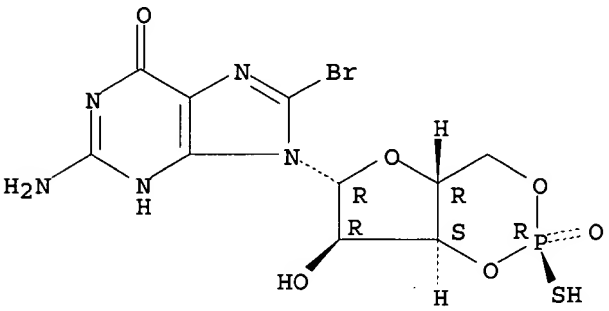
CN 1H-Benzimidazole, 5,6-dichloro-1-[3,5-O-[(S)-mercaptophosphinylidene]-β-D-ribofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



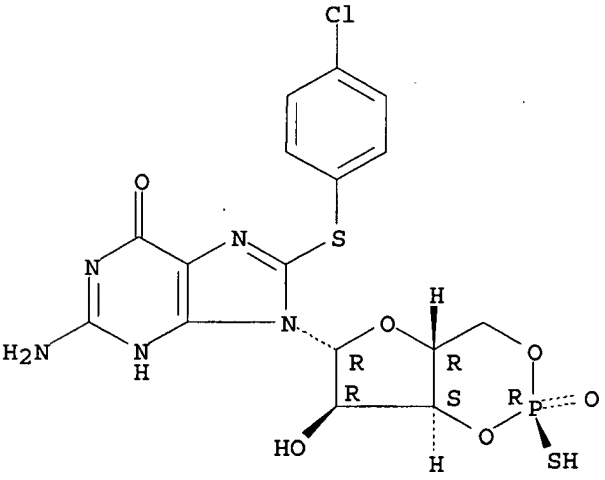
RN 150418-07-8 HCAPLUS
CN Guanosine, 8-bromo-, cyclic 3',5'-[hydrogen (R)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 153660-04-9 HCAPLUS
CN Guanosine, 8-[(4-chlorophenyl)thio]-, cyclic 3',5'-[hydrogen (R)-phosphorothioate] (9CI) (CA INDEX NAME)

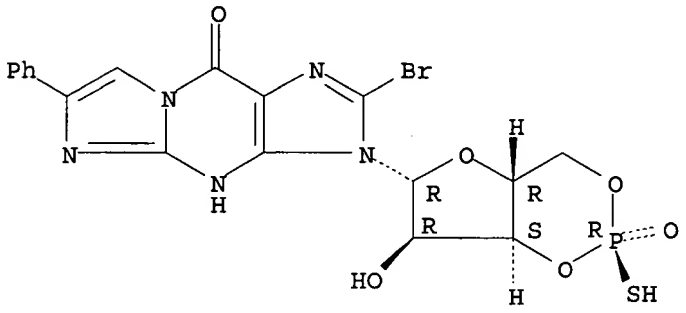
Absolute stereochemistry.



RN 172806-20-1 HCAPLUS

CN 9H-Imidazo[1,2-a]purin-9-one, 2-bromo-3,4-dihydro-3-[3,5-O-[(R)-mercaptophosphinylidene]-β-D-ribofuranosyl]-6-phenyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



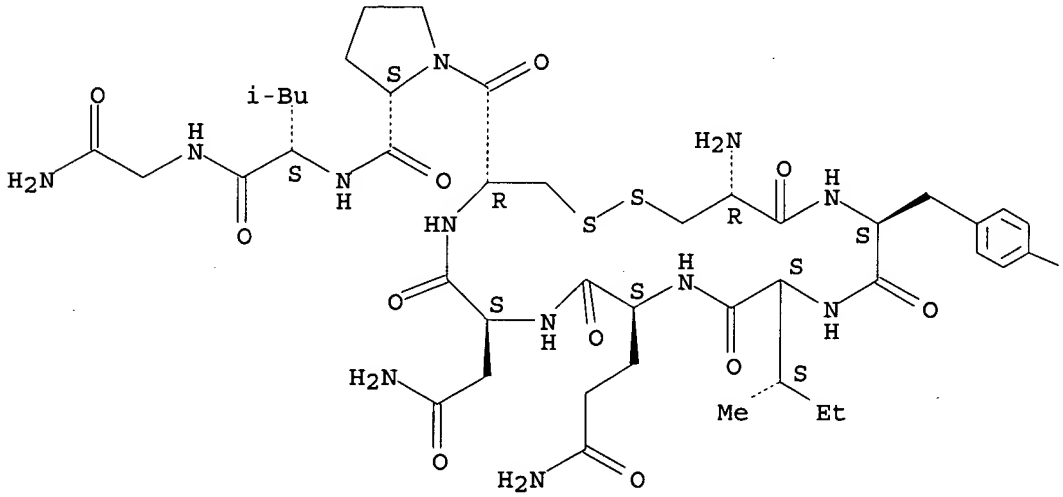
IT **50-56-6**, Oxytocin, biological studies **57-83-0**, Progesterone, biological studies **67763-96-6**, IGF I **141588-27-4**, Protein kinase G **142008-29-5**, Protein kinase A
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(chemical analogs of cAMP and cGMP effects on hormone and growth factor secretion by porcine ovarian cells)

RN 50-56-6 HCAPLUS

CN Oxytocin (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

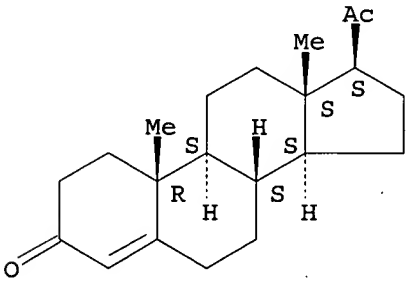
PAGE 1-A



OH

RN 57-83-0 HCAPLUS
CN Pregn-4-ene-3,20-dione (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 67763-96-6 HCAPLUS
CN Insulin-like growth factor I (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 141588-27-4 HCAPLUS
CN Kinase (phosphorylating), protein, G (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 142008-29-5 HCAPLUS
CN Kinase (phosphorylating), protein, A (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L63 ANSWER 2 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2000:22669 HCAPLUS
DOCUMENT NUMBER: 132:333178
TITLE: Additive effects of IL-2 and protein kinase A type I antagonist on function of T cells from HIV-infected patients on HAART
AUTHOR(S): Aandahl, Einar Martin; Aukrust, Pal; Muller, Fredrik; Hansson, Vidar; Tasken, Kjetil; Froland, Stig S.
CORPORATE SOURCE: Institute of Medical Biochemistry, University of Oslo, Oslo, N-0317, Norway
SOURCE: AIDS (London) (**1999**), 13(17), F109-F114
CODEN: AIDSET; ISSN: 0269-9370
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English

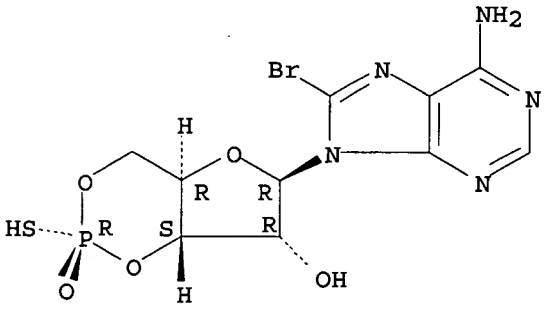
AB The objective was to explore the basis for a possible immunomodulatory combination therapy with IL-2 and agents inhibiting protein kinase A (PKA) type I. Highly active antiretroviral therapy (HAART) has dramatically improved HIV therapy, but fails to eradicate the virus, and the persistence of HIV-associated immunodeficiency demonstrates the need for addnl. immunomodulating therapies. The authors have previously shown that hyperactivation of PKA type I inhibits the function of HIV-infected patient T cells. The sep. and combined effect of a PKA type I-selective antagonist (**Rp-8-Br-cAMPS**) and interleukin (IL)-2 on the function of T cells from HIV-infected patients on HAART was examined The effect of **Rp-8-Br-cAMPS** on anti-CD3 stimulated proliferation and IL-2 production and the combined effect with exogenous IL-2 were studied in vitro with cells from 13 HIV-infected patients on HAART and 6 uninfected controls. The PKA type I-selective antagonist improved cell proliferation (median 1.5-fold, maximal 2.8-fold) and IL-2 production (median 1.5-fold, maximal 2.4-fold) in T cells from HIV-infected patients on HAART, but not in controls. The addition of IL-2 enhanced proliferation of T cells from HIV-infected patients (approx. 1.9-fold) and that of controls (approx. 1.4-fold), but IL-2 had no effect at the concns. produced by treatment with PKA type I antagonist. However, the combined effect of IL-2 and PKA type I antagonist was additive and resulted in a further increase in T-cell proliferation (median 2.5-fold, maximal 5.8-fold), reaching levels comparable with those of uninfected controls in most of the patients. The authors' findings thus suggest a basis for a novel strategy in treatment of HIV infection by combining IL-2 therapy and treatment modalities counteracting PKA type I activity with HAART.

IT **129735-00-8**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(additive effects of interleukin-2 and protein kinase A type I antagonist on function of T cells from HIV-infected patients on HAART)

RN 129735-00-8 HCAPLUS

CN Adenosine, 8-bromo-, cyclic 3',5'-[hydrogen [P(R)]-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **142008-29-5**, Protein kinase A
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(type I, antagonist; additive effects of interleukin-2 and protein kinase A type I antagonist on function of T cells from HIV-infected patients on HAART)

RN 142008-29-5 HCAPLUS

CN Kinase (phosphorylating), protein, A (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

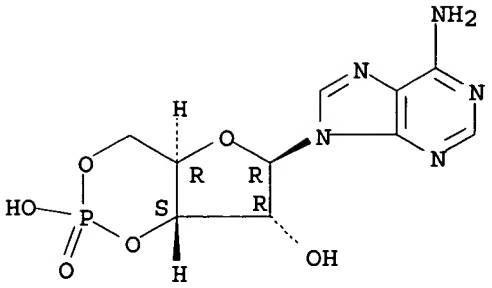
L63 ANSWER 3 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1999:662432 HCAPLUS
DOCUMENT NUMBER: 131:334770
TITLE: Activation of an apical Cl- conductance by extracellular ATP in Necturus gallbladder is mediated by cAMP and not by [Ca2+]i
AUTHOR(S): Vank, C.; Fromter, E.; Kottra, G.
CORPORATE SOURCE: Zentrum der Physiologie, Klinikum der J.W. Goethe-Universitat, Frankfurt am Main, D-60590, Germany
SOURCE: Pfluegers Archiv (**1999**), 438(4), 486-496
CODEN: PFLABK; ISSN: 0031-6768
PUBLISHER: Springer-Verlag
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Necturus gallbladder epithelium (NGE) expresses a CFTR-like apical Cl- conductance that can be activated by cAMP. Here, we show that extracellular ATP (100 μM), which is known to elevate intracellular Ca2+ and to hyperpolarize cells by stimulating apical and basolateral K+ conductances, also stimulates an apical Cl- conductance (Ga,Cl), however with a much slower time course. The selectivity sequence of Ga,Cl was SCN- > I- > NO3- > Br- > Cl- >> isethionate (ISE-), but SCN- and I- partially blocked it, which is analogous to observations of CFTR Cl- channels. To disclose a possible role for intracellular Ca2+, gallbladders were incubated with the Ca2+ chelator BAPTA/AM or bathed in solns. containing only submicromolar Ca2+ concns. BAPTA partially inhibited the Ca2+-mediated hyperpolarization, but did not reduce the ATP-dependent activation of Ga,Cl and the latter was also seen in low extracellular Ca2+. On the other hand, the cAMP-antagonist **Rp-8-Br-cAMPS** strongly inhibited the stimulation of Ga,Cl by ATP (as well as by forskolin), but left the ATP-induced hyperpolarization unchanged. Preincubation with a low concentration of forskolin markedly enhanced the stimulatory effect of ATP, and this effect was not modified by the selective inhibition of protein kinase C. These data suggest the involvement of different signal transduction pathways in the ATP-dependent activation of K+ and Cl- conductances in NGE. The stimulation of the Ga,Cl appears to be mediated by cAMP but not by elevation of intracellular Ca2+.

IT **60-92-4**, CAMP **7440-70-2**, Calcium, biological studies **141436-78-4**, Protein kinase C **142008-29-5**, Protein kinase A
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(chloride conductance activation by ATP in amphibian gallbladder is mediated by cAMP)

RN 60-92-4 HCAPLUS
CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 7440-70-2 HCAPLUS
CN Calcium (8CI, 9CI) (CA INDEX NAME)

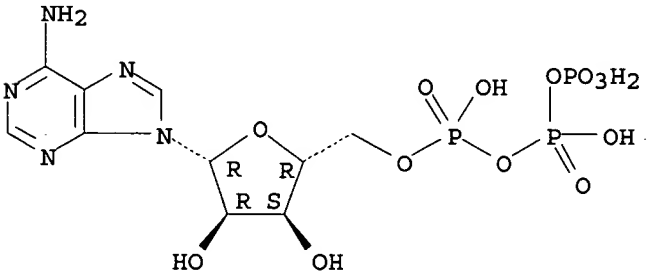
Ca

RN 141436-78-4 HCAPLUS
CN Kinase (phosphorylating), protein, cPKC (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 142008-29-5 HCAPLUS
CN Kinase (phosphorylating), protein, A (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **56-65-5**, 5'-ATP, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(chloride conductance activation by ATP in amphibian gallbladder is mediated by cAMP)
RN 56-65-5 HCAPLUS
CN Adenosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **16887-00-6**, Chloride, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(chloride conductance activation by ATP in amphibian gallbladder is mediated by cAMP)
RN 16887-00-6 HCAPLUS
CN Chloride (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

Cl^-

REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

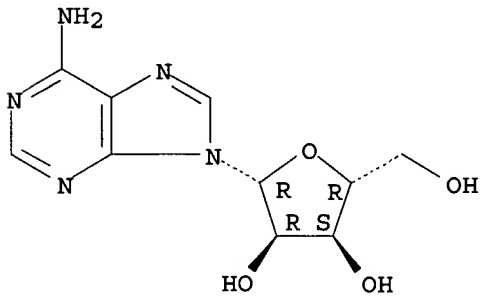
L63 ANSWER 4 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1999:632077 HCAPLUS
DOCUMENT NUMBER: 131:335004
TITLE: cAMP-independent dilation of coronary arterioles to adenosine: role of nitric oxide, G proteins, and KATP channels
AUTHOR(S): Hein, Travis W.; Kuo, Lih
CORPORATE SOURCE: Department of Medical Physiology, Cardiovascular Research Institute, Texas A and M University System Health Science Center, College Station, TX, 77843-1114, USA
SOURCE: Circulation Research (**1999**), 85(7), 634-642
CODEN: CIRUAL; ISSN: 0009-7330
PUBLISHER: Lippincott Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Adenosine is known to play an important role in the regulation of coronary blood flow during metabolic stress. However, there is sparse information on the mechanism of adenosine-induced dilation at the microcirculatory levels. In the present study, we examined the role of endothelial nitric oxide (NO), G proteins, cyclic nucleotides, and potassium channels in coronary arteriolar dilation to adenosine. Pig subepicardial coronary arterioles (50 to 100 μm in diameter) were isolated, cannulated, and pressurized to 60 cm H2O without flow for in vitro study. The arterioles developed basal tone and dilated dose dependently to adenosine. Disruption of endothelium, blocking of endothelial ATP-sensitive potassium (KATP) channels by glibenclamide, and inhibition of NO synthase by NG-nitro-L-arginine Me ester and of soluble guanylyl cyclase by 1H-[1,2,4]oxadiazolo[4,3,-a]quinoxalin-1-one produced identical attenuation of vasodilation to adenosine. Combined administration of these inhibitors did not further attenuate the vasodilatory response. Production of NO from coronary arterioles was significantly increased by adenosine. Pertussis toxin, but not cholera toxin, significantly inhibited vasodilation to adenosine, and this inhibitory effect was only evident in vessels with an intact endothelium. Tetraethylammonium, glibenclamide, and a high concentration of extraluminal KCl abolished vasodilation of denuded vessels to adenosine; however, inhibition of calcium-activated potassium channels by iberiotoxin had no effect on this dilation. **Rp-8-Br-cAMPS**, a cAMP antagonist, inhibited vasodilation to cAMP analog 8-Br-cAMP but failed to block adenosine-induced dilation. Furthermore, vasodilations to 8-Br-cAMP and sodium nitroprusside were not inhibited by glibenclamide, indicating that cAMP- and cGMP-induced dilations are not mediated by the activation of KATP channels. These results suggest that adenosine activates both endothelial and smooth muscle pathways to exert its vasodilatory function. On one hand, adenosine opens endothelial KATP channels through activation of pertussis toxin-sensitive G proteins. This signaling leads to the production and release of NO, which subsequently activates smooth muscle soluble guanylyl cyclase for vasodilation. On the other hand, adenosine activates smooth muscle KATP channels and leads to vasodilation through hyperpolarization. It appears that the latter vasodilatory process is independent of G proteins and of cAMP/cGMP pathways.

IT **10102-43-9**, Nitric oxide, biological studies
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(role of nitric oxide, G proteins, and KATP channels in cAMP-independent dilation of coronary arterioles to adenosine)
RN 10102-43-9 HCAPLUS
CN Nitrogen oxide (NO) (8CI, 9CI) (CA INDEX NAME)

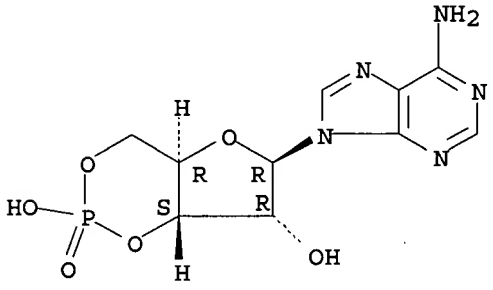
IT **58-61-7**, Adenosine, biological studies **60-92-4**, CAMP **7665-99-8**, CGMP
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(role of nitric oxide, G proteins, and KATP channels in cAMP-independent dilation of coronary arterioles to adenosine)
RN 58-61-7 HCAPLUS
CN Adenosine (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



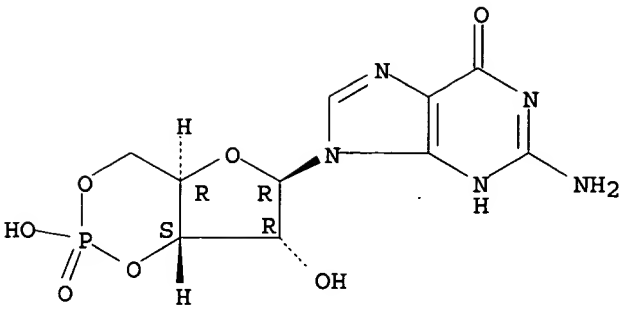
RN 60-92-4 HCAPLUS
CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 7665-99-8 HCAPLUS
CN Guanosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



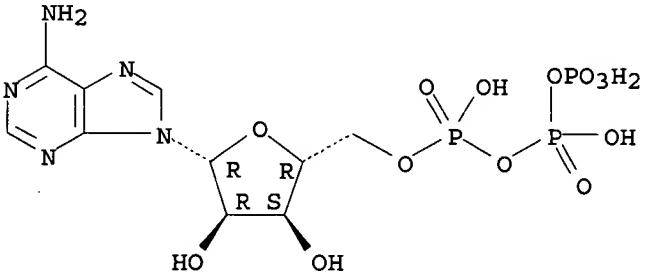
IT **7440-09-7**, Potassium, biological studies **9054-75-5**, Guanylyl cyclase
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(role of nitric oxide, G proteins, and KATP channels in cAMP-independent dilation of coronary arterioles to adenosine)
RN 7440-09-7 HCAPLUS
CN Potassium (8CI, 9CI) (CA INDEX NAME)

K

RN 9054-75-5 HCAPLUS
CN Cyclase, guanylate (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **56-65-5**, 5'-ATP, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(role of nitric oxide, G proteins, and KATP channels in cAMP-independent dilation of coronary arterioles to adenosine)
RN 56-65-5 HCAPLUS
CN Adenosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 50 THERE ARE 50 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L63 ANSWER 5 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1999:454020 HCAPLUS
DOCUMENT NUMBER: 131:209517
TITLE: IP-10 inhibits epidermal growth factor-induced motility by decreasing epidermal growth factor

receptor-mediated calpain activity

AUTHOR(S): Shiraha, Hidenori; Glading, Angela; Gupta, Kiran; Wells, Alan

CORPORATE SOURCE: Department of Pathology, University of Alabama at Birmingham, Birmingham, AL, 35294-0007, USA

SOURCE: Journal of Cell Biology (**1999**), 146(1), 243-253
CODEN: JCLBA3; ISSN: 0021-9525

PUBLISHER: Rockefeller University Press

DOCUMENT TYPE: Journal

LANGUAGE: English

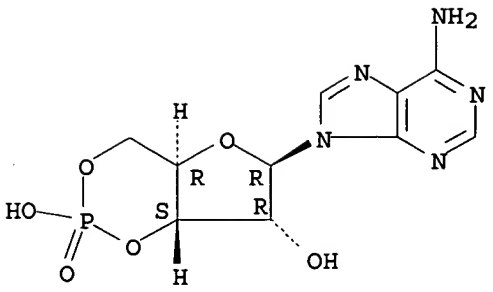
AB During wound healing, fibroblasts are recruited from the surrounding tissue to accomplish repair. The requisite migration and proliferation of the fibroblasts is promoted by growth factors including those that activate the epidermal growth factor receptor (EGFR). Counterstimulatory factors in wound fluid are postulated to limit this response; among these factors is the ELR-neg. CXC chemokine, interferon inducible protein-10 (IP-10). We report here that IP-10 inhibited EGF- and heparin-binding EGF-like growth factor-induced Hs68 human dermal fibroblast motility in a dose-dependent manner (to 52% and 44%, resp., at 50 ng/mL IP-10), whereas IP-10 had no effect on either basal or EGFR-mediated mitogenesis (96% at 50 ng/mL). These data demonstrate for the first time a counterstimulatory effect of IP-10 on a specific induced fibroblast response, EGFR-mediated motility. To define the mol. basis of this neg. trans-modulation of EGFR signaling, we found that IP-10 did not adversely impact receptor or immediate postreceptor signaling as determined by tyrosyl phosphorylation of EGFR and two major downstream effectors phospholipase C-γ and Erk mitogen-activated protein kinases. Morphol. studies suggested which biophys. steps may be affected by demonstrating that IP-10 treatment resulted in an elongated cell morphol. reminiscent of failure to detach the uropod; in support of this, IP-10 pretreatment inhibited EGF-induced cell detachment. These data suggested that calpain activity may be involved. The cell permeant agent, calpain inhibitor I, limited EGF-induced motility and de-adhesion similarly to IP-10. IP-10 also prevented EGF-induced calpain activation (reduced by 71%). That this inhibition of EGF-induced calpain activity was secondary to IP-10 initiating a cAMP-protein kinase A-calpain cascade is supported by the following evidence: (a) the cell permeant analog 8-(4-chlorophenylthio)-cAMP (CPT-cAMP) prevented EGF-induced calpain activity and motility; (b) other ELR-neg. CXC chemokines, monokine induced by IFN-γ and platelet factor 4 that also generate cAMP, inhibited EGF-induced cell migration and calpain activation; and (c) the protein kinase A inhibitor **Rp-8-Br-cAMPS** abrogated IP-10
inhibition of cell migration, cell detachment, and calpain activation. Our findings provide a model by which IP-10 suppresses EGF-induced cell motility by inhibiting EGF-induced detachment of the trailing edges of motile cells.

IT **60-92-4**, CAMP
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(IP-10 inhibits EGF-induced motility by decreasing EGF receptor-mediated calpain activity and signaling therein)

RN 60-92-4 HCAPLUS

CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **62229-50-9**, Epidermal growth factor **154531-34-7**,
Heparin-binding EGF-like growth factor
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(IP-10 inhibits EGF-induced motility by decreasing EGF receptor-mediated calpain activity and signaling therein)
RN 62229-50-9 HCAPLUS
CN Epidermal growth factor (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 154531-34-7 HCAPLUS
CN Epidermal growth factor-like growth factor, heparin-binding (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **9001-86-9**, Phospholipase C **78990-62-2**, Calpain
142008-29-5, Protein kinase A **142243-02-5**,
Mitogen-activated protein kinase
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(IP-10 inhibits EGF-induced motility by decreasing EGF receptor-mediated calpain activity and signaling therein)
RN 9001-86-9 HCAPLUS
CN Phospholipase C (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 78990-62-2 HCAPLUS
CN Calpain (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 142008-29-5 HCAPLUS
CN Kinase (phosphorylating), protein, A (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 142243-02-5 HCAPLUS
CN Kinase (phosphorylating), mitogen-activated protein (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **37270-94-3**, Platelet factor 4
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(chemokine inhibition of EGF-induced motility and signaling therein)
RN 37270-94-3 HCAPLUS
CN Blood platelet factor 4 (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
REFERENCE COUNT: 43 THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

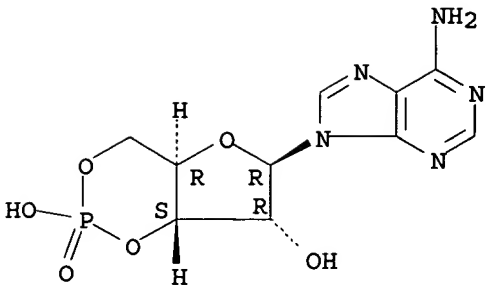
L63 ANSWER 6 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1999:438192 HCAPLUS
DOCUMENT NUMBER: 131:252757
TITLE: Nociceptin/orphanin FQ dilates pial arteries by KATP and Kca channel activation
AUTHOR(S): Armstead, William M.
CORPORATE SOURCE: Departments of Anesthesia and Pharmacology, University of Pennsylvania, Philadelphia, PA, 19104, USA
SOURCE: Brain Research (**1999**), 835(2), 315-323
CODEN: BRREAP; ISSN: 0006-8993
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Nociceptin/orphanin FQ (NOC/oFQ) is a recently discovered endogenous ligand for the opioid like receptor, ORL-1. In the piglet, cGMP activates the ATP sensitive (KATP) while cAMP activates both the KATP and the calcium sensitive (Kca) K+ channel to elicit vasodilation. The present study was designed to characterize the role of cGMP, cAMP, KATP, and Kca channel activation in NOC/oFQ-induced pial artery dilation in newborn pigs equipped with a closed cranial window. NOC/oFQ (10-8, 10-6 M) induced pial arteriole dilation was decreased by the protein kinase A inhibitor **Rp 8-Br cAMPs** (16±1 and 30±1 vs. 5±1 and 10±1%). NOC/oFQ dilation was associated with elevated CSF cAMP (1037±58 vs. 1919±209 fmol/mL for control and 10-6 M NOC/oFQ). Glibenclamide and iberiotoxin, KATP and Kca channel antagonists, attenuated NOC/oFQ induced dilation (15±1 and 28±1 vs. 10±1 and 19±1% before and after iberiotoxin). In contrast, the nitric oxide synthase inhibitor, L-NNA, and the protein kinase G inhibitor, Rp 8-Br cGMPs had no effect on NOC/oFQ dilation while such dilation was not associated with a change in CSF cGMP. The putative ORL-1 receptor antagonist [F/G] NOC/oFQ (1-13)-NH2 blocked NOC/oFQ dilation while responses were unchanged after naloxone (17±1 and 30±2 vs. 3±1 and 5±1%, before and after [F/G] NOC/oFQ (1-13)-NH2). Dilation to other opioids (e.g., methionine enkephalin) was unchanged by [F/G] NOC/oFQ (1-13)-NH2. These data show that NOC/oFQ elicits pial artery dilation, at least in part, via cAMP, KATP, and Kca channel dependent mechanisms. These data suggest that such a mechanism involves the sequential release of cAMP and subsequent KATP and Kca channel activation.

IT **60-92-4**, CAMP
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(mechanism of orphanin FQ induced dilatation of pial arteries by KATP and Kca channel activation)

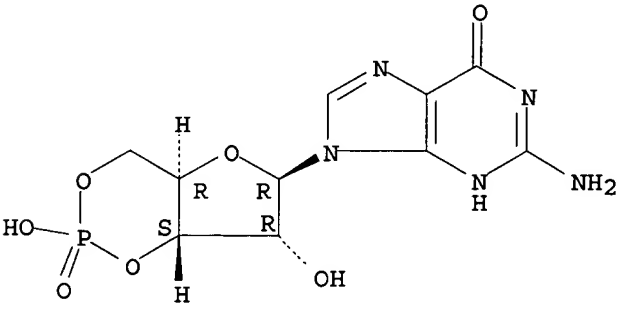
RN 60-92-4 HCAPLUS
CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **7665-99-8**, CGMP **10102-43-9**, Nitric oxide, biological studies **170713-75-4**, Orphanin FQ
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(mechanism of orphanin FQ induced dilatation of pial arteries by KATP and Kca channel activation)
RN 7665-99-8 HCAPLUS
CN Guanosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

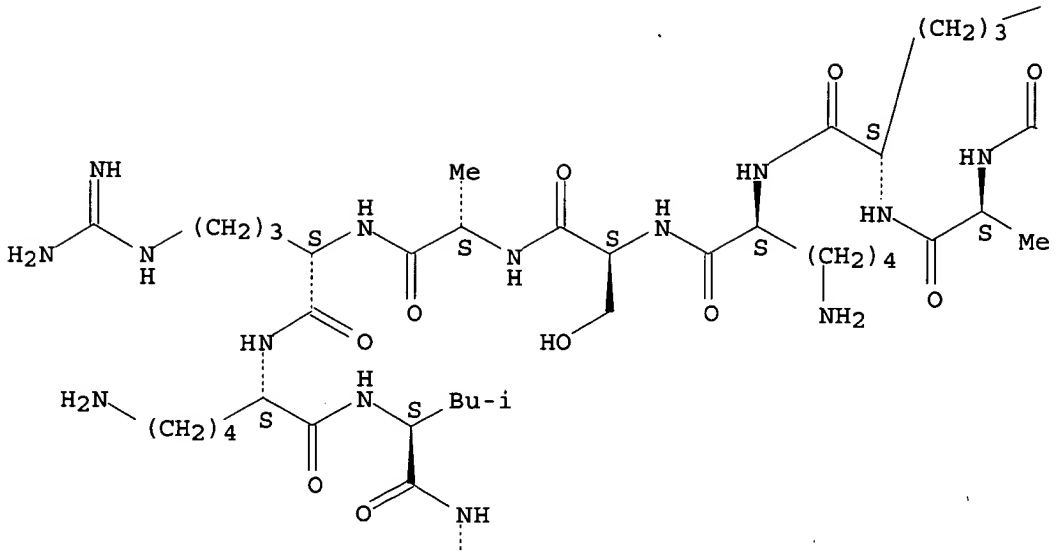


RN 10102-43-9 HCAPLUS
CN Nitrogen oxide (NO) (8CI, 9CI) (CA INDEX NAME)

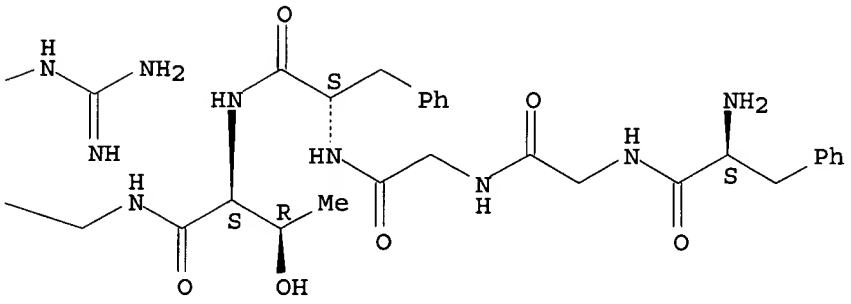
RN 170713-75-4 HCAPLUS
CN Orphanin FQ (swine) (9CI) (CA INDEX NAME)

Absolute stereochemistry.

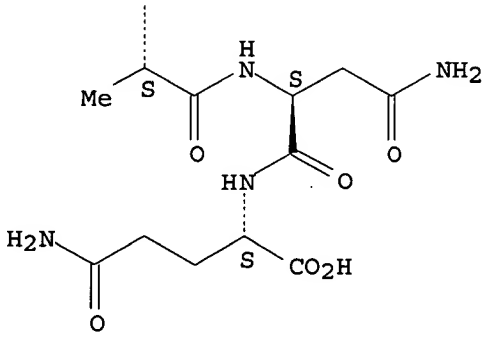
PAGE 1-A



PAGE 1-B



PAGE 2-A



IT **7440-09-7**, Potassium, biological studies **142008-29-5**, Protein kinase A
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(mechanism of orphanin FQ induced dilatation of pial arteries by KATP and Kca channel activation)
RN 7440-09-7 HCAPLUS
CN Potassium (8CI, 9CI) (CA INDEX NAME)

K

RN 142008-29-5 HCAPLUS
CN Kinase (phosphorylating), protein, A (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **7440-09-7**, Potassium, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(transport; mechanism of orphanin FQ induced dilatation of pial arteries by KATP and Kca channel activation)
RN 7440-09-7 HCAPLUS
CN Potassium (8CI, 9CI) (CA INDEX NAME)

K

REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L63 ANSWER 7 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1999:438031 HCAPLUS
DOCUMENT NUMBER: 131:197432
TITLE: Differential modulation of nucleoside transport types in neuroblastoma cells by protein kinase activation
AUTHOR(S): Sen, Raquel P.; Delicado, Esmerilda G.; Miras-Portugal, M. Teresa
CORPORATE SOURCE: Departamento de Bioquimica, Facultad de Veterinaria, Universidad Complutense, Madrid, 28040, Spain
SOURCE: Neuropharmacology (**1999**), 38(7), 1009-1015
CODEN: NEPHBW; ISSN: 0028-3908
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Nucleoside transport regulation in undifferentiated Neuro-2A cells has been studied and found to include Na+-dependent adenosine transport and facilitated diffusion adenosine transport. The latter corresponded to nitrobenzylthioinosine-sensitive nucleoside transport. Short-term treatment of Neuro-2A cells with physiol. relevant signals only modulated the facilitated diffusion component. The stimulation of undifferentiated cells with forskolin or other activators of the protein kinase A pathway, decreased NBTI-sensitive adenosine transport. Treatment of cells with an inactive analog of forskolin, 1,9-dideoxy-forskolin, had no effect on NBTI-sensitive nucleoside transport. Therefore, the inhibition of protein kinase A activity by pre-incubation with H-89 or the cAMP antagonist, **Rp-8-Br-cAMPS**, completely prevented the inhibitory effect of forskolin. Similarly, the activation of protein

kinase C with phorbol 12,13-dibutyrate (PDBu) and the calcium ionophore A-23187 decreased NBTI-sensitive adenosine transport. The effect of PDBu was reversed by pre-incubation of cells with staurosporine. Maximal transport inhibition was obtained by the simultaneous stimulation of cells with a phorbol ester and A-23187 or a phorbol ester and forskolin. The modulation of NBTI-sensitive nucleoside transport corresponded to changes in specific [3H]NBTI binding to Neuro-2A cells. Maximal inhibition correlated well with a maximal enhancement of cAMP production However, the Na+-dependent adenosine transport in Neuro-2A cells was not modulated by any of these signals.

IT **141436-78-4**, Protein kinase C **142008-29-5**, Protein kinase A
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(differential modulation of nucleoside transport types in neuroblastoma cells by protein kinase activation)

RN 141436-78-4 HCAPLUS
CN Kinase (phosphorylating), protein, cPKC (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

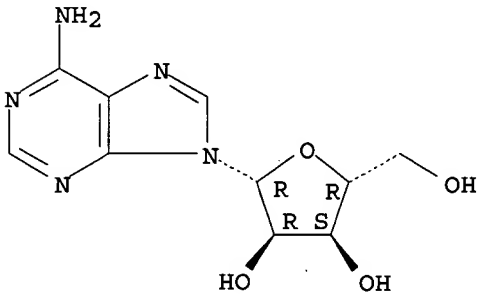
RN 142008-29-5 HCAPLUS
CN Kinase (phosphorylating), protein, A (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT **58-61-7**, Adenosine, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(differential modulation of nucleoside transport types in neuroblastoma cells by protein kinase activation)

RN 58-61-7 HCAPLUS
CN Adenosine (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L63 ANSWER 8 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1999:383596 HCAPLUS
DOCUMENT NUMBER: 131:156063
TITLE: Regulation of L-type Ca2+ channels in rabbit portal vein by G protein αs and βγ subunits
AUTHOR(S): Zhong, Juming; Dessauer, Carmen W.; Keef, Kathleen D.; Hume, Joseph R.
CORPORATE SOURCE: Department of Physiology and Cell Biology, University of Nevada School of Medicine, Reno, NV, 89557, USA

SOURCE: Journal of Physiology (Cambridge, United Kingdom) (**1999**), 517(1), 109-120
CODEN: JPHYA7; ISSN: 0022-3751
PUBLISHER: Cambridge University Press
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The effect of purified G protein subunits αs and βγ on L-type Ca2+ channels in vascular smooth muscle and the possible pathways involved were investigated using freshly isolated smooth muscle cells from rabbit portal vein and the whole-cell patch clamp technique. Cells dialyzed with either Gαs or Gβγ exhibited significant increases in peak Ba2+ current (IBa) d. (148% and 131%, resp.) compared with control cells. The combination of Gαs and Gβγ further increased peak IBa d. (181%). Inactive Gαs and Gβγ did not have any effect on Ca2+ channels. The stimulatory effect of Gαs on peak IBa was entirely abolished by the protein kinase A inhibitor **Rp-8-Br-cAMPS**, or the adenylyl cyclase inhibitor SQ 22536. On the other hand, the stimulatory response of Ca2+ channels to Gβγ was not affected by the protein kinase A inhibitors **Rp-8-Br-cAMPS** and KT 5720, or by the Ca2+-dependent protein kinase C inhibitor bisindolylmaleimide 1, but was completely blocked by the protein kinase C inhibitor calphostin C. Pretreatment of cells with phorbol 12-myristate 13-acetate for over 18 h prevented the stimulatory effect of Gβγ on peak IBa. In addition, acute application of phorbol 12,13-dibutyrate enhanced peak IBa d. in control cells, which could be entirely blocked by calphostin C. These data indicate that enhancement of Ba2+ currents by Gαs and Gβγ can be attributed to increased activity of protein kinase A and protein kinase C, resp. No direct membrane-delimited pathway for Ca2+ channel regulation by activated Gs proteins could be detected in vascular smooth muscle cells.

IT **9012-42-4**, Adenylyl cyclase **141436-78-4**, Protein kinase C **142008-29-5**, Protein kinase A
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(involvement of protein kinases and adenylyl cyclase in regulation of L-type Ca2+ channels in rabbit portal vein by G protein αs and βγ subunits)

RN 9012-42-4 HCAPLUS
CN Cyclase, adenylate (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 141436-78-4 HCAPLUS
CN Kinase (phosphorylating), protein, cPKC (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 142008-29-5 HCAPLUS
CN Kinase (phosphorylating), protein, A (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT **7440-70-2**, Calcium, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(regulation of L-type Ca2+ channels in rabbit portal vein by G protein αs and βγ subunits)

RN 7440-70-2 HCAPLUS
CN Calcium (8CI, 9CI) (CA INDEX NAME)

Ca

REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

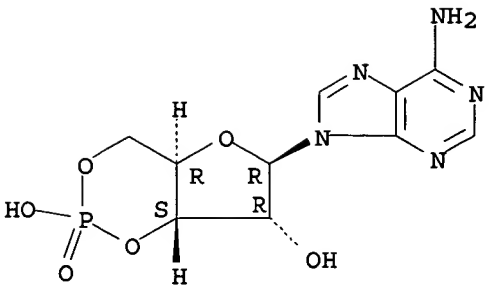
L63 ANSWER 9 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1999:364325 HCAPLUS
DOCUMENT NUMBER: 131:114961
TITLE: Activation of the cAMP signaling pathway increases apoptosis in human B-precursor cells and is associated with downregulation of Mcl-1 expression
AUTHOR(S): Myklebust, June Helen; Josefsen, Dag; Blomhoff, Heidi Kiil; Levy, Finn Olav; Naderi, Soheil; Reed, John C.; Smeland, Erlend B.
CORPORATE SOURCE: Department of Immunology, The Norwegian Radium Hospital, Oslo, N-0310, Norway
SOURCE: Journal of Cellular Physiology (**1999**), 180(1), 71-80
CODEN: JCLLAX; ISSN: 0021-9541
PUBLISHER: Wiley-Liss, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB During B- and T-cell ontogeny, extensive apoptosis occurs at distinct stages of development. Agents that increase intracellular levels of cAMP induce apoptosis in thymocytes and mature B cells, prompting the authors to investigate the role of cAMP signaling in human CD10+ B-precursor cells. The authors show for the first time that forskolin (which increases intracellular levels of cAMP) increases apoptosis in the CD10+ cells in a dose-dependent manner (19%-94% with 0-1000 μM forskolin after 48 h incubation, IC50 = 150 μM). High levels of apoptosis were also obtained by exposing the cells to the cAMP analog 8-chlorophenylthio-cAMP (8-CPT-cAMP). Specific involvement of cAMP-dependent protein kinase (PKA) was demonstrated by the ability of a cAMP antagonist, Rp-isomer of 8-bromo-adenosine- 3', 5'-monophosphorothioate (**Rp-8-Br-cAMPS**), to reverse the apoptosis increasing effect of the complementary cAMP agonist, Sp-8-Br-cAMPS. Furthermore, the authors investigated the expression of Bcl-2 family proteins. The authors found that treatment of the cells with forskolin or 8-CPT-cAMP for 48 h resulted in a fourfold decline in the expression of Mcl-1 compared to control cells. The expression of Bcl-2, Bcl-xL, or Bax was largely unaffected. Mature peripheral blood B cells showed a smaller increase in the percentage of apoptotic cells in response to 8-CPT-cAMP (1.3-fold) compared to B-precursor cells, and a smaller decrease in Mcl-1 levels (1.5-fold). Taken together, these findings show that cAMP is important in the regulation of apoptosis in B-progenitor and mature B cells and suggest that cAMP-increased apoptosis could be mediated, at least in part, by a decrease in Mcl-1 levels.

IT **60-92-4**, CAMP **142008-29-5**, CAMP-dependent protein kinase
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(cAMP signaling pathway increasing apoptosis in human B-precursor cells association with downregulation of Mcl-1 expression)

RN 60-92-4 HCAPLUS
CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 142008-29-5 HCAPLUS
CN Kinase (phosphorylating), protein, A (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
REFERENCE COUNT: 56 THERE ARE 56 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

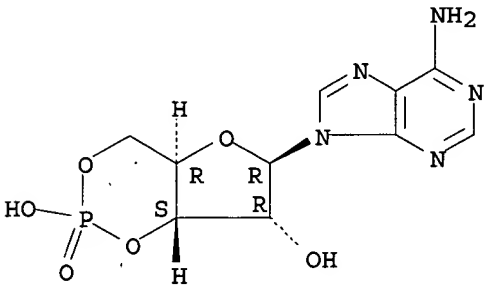
L63 ANSWER 10 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1999:182398 HCAPLUS
DOCUMENT NUMBER: 131:71753
TITLE: Cyclic AMP but not phosphorylation of phospholamban contributes to the slow inotropic response to stretch in ferret papillary muscle
AUTHOR(S): Calaghan, S. C.; Colyer, J.; White, E.
CORPORATE SOURCE: School of Biomedical Sciences, University of Leeds, Leeds, LS2 9NQ, UK
SOURCE: Pfluegers Archiv (**1999**), 437(5), 780-782
CODEN: PFLABK; ISSN: 0031-6768
PUBLISHER: Springer-Verlag
DOCUMENT TYPE: Journal
LANGUAGE: English
AB CAMP has been suggested to mediate the increased intracellular Ca2+ transient and contraction seen during the slow response to stretch in cardiac muscle. We measured cAMP in ferret papillary muscles stretched from 80-85% to 98% of their length at which maximum active tension is produced (Lmax) for 15 min. cAMP was significantly ($P<0.05$) increased by 53% in muscles at the longer length which showed the slow response compared with controls. By contrast, in a population of muscles that were stretched but did not show the slow response, cAMP was not significantly different from that in muscles at the short length. Although cAMP can increase sarcoplasmic reticulum (SR) Ca2+ uptake by phosphorylation of phospholamban, we found no significant effect of stretch on phosphorylation of phospholamban at either Ser16 or Thr17. Further support for the hypothesis that cAMP is a mediator of the slow response was obtained by exposure of some muscles to the cell-permeable cAMP antagonist 8-bromo, adenosine 3',5'-cyclic monophosphorothioate, Rp isomer **Rp-8-Br-cAMPS**, (2.5-10 mM). The slow response was reduced by 30% ($P<0.05$) in the presence of this antagonist. Our results not only provide evidence for the mediation of the slow response to stretch by cAMP, they also suggest that cAMP may rise in an intracellular compartment inaccessible to the SR.
IT **7440-70-2**, Calcium, biological studies
RL: BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(cAMP contributes to calcium transient response to stretch in ferret papillary muscle)

RN 7440-70-2 HCAPLUS
CN Calcium (8CI, 9CI) (CA INDEX NAME)

Ca

IT **60-92-4**, CAMP
RL: BAC (Biological activity or effector, except adverse); BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(cAMP contributes to slow inotropic response to stretch in ferret papillary muscle)
RN 60-92-4 HCAPLUS
CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **7440-70-2**, Calcium, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(transport; cAMP contributes to calcium transient response to stretch in ferret papillary muscle)
RN 7440-70-2 HCAPLUS
CN Calcium (8CI, 9CI) (CA INDEX NAME)

Ca

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L63 ANSWER 11 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1999:90638 HCAPLUS
DOCUMENT NUMBER: 130:251109
TITLE: Increased activation of protein kinase A type I contributes to the T cell deficiency in common variable immunodeficiency
AUTHOR(S): Aukrust, Pal; Aandahl, Einar Martin; Skalhegg, Bjorn S.; Nordoy, Ingvild; Hansson, Vidar; Tasken, Kjetil; Froland, Stig S.; Muller, Fredrik
CORPORATE SOURCE: Medical Department A, Section of Clinical Immunology and Infectious Diseases and Research Institute for Internal Medicine, Rikshospitalet, Oslo, N-0027, Norway
SOURCE: Journal of Immunology (**1999**), 162(2), 1178-1185

CODEN: JOIMA3; ISSN: 0022-1767
PUBLISHER: American Association of Immunologists
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The mol. mechanisms underlying the T cell dysfunction often present in common variable immunodeficiency (CVI) are not established. CAMP-dependent protein kinase A type I (PKAI) is an important inhibitor of T cell proliferation after Ag stimulation. We therefore investigated the possibility that activation of PKAI may be involved in the development of T cell dysfunction in CVI. An exogenously added PKAI-selective antagonist (**Rp-8-Br-cAMPS**) induced a significant increase in anti-CD3-stimulated PBMC proliferation in 20 CVI patients compared with no effect in 15 controls. Purified T cells from 7 CVI patients with strictly defined T cell deficiency had elevated endogenous cAMP levels compared with controls. Treatment of T cells from these CVI patients with Rp-8-bromo-cAMP-phosphorothioate markedly improved anti-CD3-stimulated proliferation (up to 3.7-fold), particularly in CD4+ lymphocytes, reaching proliferation levels comparable to control values. No effect of cAMP antagonist on T cell proliferation was seen in controls. In these CVI patients, cAMP antagonist also increased IL-2 production in anti-CD3-stimulated T cells. However, exogenously added IL-2 at concns. comparable to the achieved increase in IL-2 levels after addition of cAMP antagonist had no effect on T cell proliferation. Furthermore, the stimulatory effects of exogenously added IL-2 at higher concns. and cAMP antagonist on T cell proliferation were additive. Our findings indicate that increased PKAI activation may be an important mol. basis for the T cell defect in CVI and suggest that the cAMP/PKAI system may be a potential mol. target for immunomodulating therapy in these patients.

IT **142008-29-5**, CAMP-dependent Protein kinase A
RL: ADV (Adverse effect, including toxicity); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(increased activation of protein kinase A type I contributes to the T cell deficiency in common variable immunodeficiency)

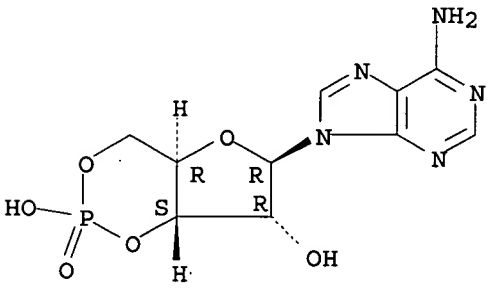
RN 142008-29-5 HCAPLUS
CN Kinase (phosphorylating), protein, A (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT **60-92-4**, CAMP
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(increased activation of protein kinase A type I contributes to the T cell deficiency in common variable immunodeficiency in relation to)

RN 60-92-4 HCAPLUS
CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L63 ANSWER 12 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1999:69194 HCAPLUS
DOCUMENT NUMBER: 130:277074
TITLE: Protein kinase A inhibition and PACAP-induced insulin secretion in HIT-T15 cells
AUTHOR(S): Filipsson, Karin; Ahren, Bo
CORPORATE SOURCE: Department of Medicine, Malmo University Hospital, Lund University, Malmo, SE-205 02, Swed.
SOURCE: Annals of the New York Academy of Sciences (**1998**), 865(VIP, PACAP, and Related Peptides), 441-444
CODEN: ANYAA9; ISSN: 0077-8923
PUBLISHER: New York Academy of Sciences
DOCUMENT TYPE: Journal
LANGUAGE: English

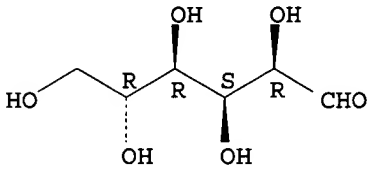
AB The importance of the increase in cellular cAMP content for the stimulation of exocytosis by pituitary adenylate cyclase-activating polypeptide-38 (PACAP38) may be studied by inhibiting protein kinase A (PKA) as PKA is activated by cAMP and thought to mediate its actions. For this purpose it is necessary to use a reliable PKA inhibitor. In this study the authors have examined the effects of three PKA inhibitors: Rp-cAMPS, **Rp-8-Br-cAMPS** and H89 (N-[2-(p-bromocinnamylamino)ethyl]-5-isoquinoline sulfonamide) on PACAP38 and forskolin-stimulated insulin secretion in HIT-T15 cells. In the first series of expts., the authors verified previous results that after 60-min incubation, PACAP38 or forskolin at 10 mM glucose potentiates insulin secretion. When incubating the cells for 60 min in the presence of either of the three PKA inhibitors, the authors found that none of them inhibited insulin secretion after stimulation with PACAP38, and that only **Rp-8-Br-cAMPS** could slightly inhibit the response to forskolin. The effect of glucose on insulin secretion was not affected by any of the three PKA inhibitors. The failure of the PKA inhibitors to inhibit insulin secretion might be explained by a too long (60 min) incubation time. Therefore the authors shortened the incubation time to 15 min. The authors then found that Rp-cAMPS and **Rp-8-Br-cAMPS** still had no effect on glucose, PACAP38-, or forskolin-induced insulin secretion. However H89 decreased insulin levels at 10 mM glucose from 1170 pmol/l in controls to 1010 pmol/l, and PACAP38-induced insulin secretion was inhibited from 2230 pmol/l in controls to 1410 pmol/l. Similarly, the forskolin-induced insulin secretion was inhibited from 2690 pmol/l in the absence of H89 to 1920 pmol/l with the inhibitor. In conclusion both the PACAP38- and the forskolin-induced insulin secretion were inhibited by approx. 35% by H89 after 15-min incubation, whereas the Rp-isomers of cAMP were ineffective. The PKA inhibitor most suitable for the authors' cell system is H89 and the inhibition of PKA is best studied during shorter time periods. With H89, therefore, the contribution of cAMP for PACAP-induced insulin secretion in HIT-T15 cells might be examined in further studies.

IT **142008-29-5**, Protein kinase A
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(protein kinase A inhibition in relation to contribution of cAMP for PACAP-induced insulin secretion in HIT-T15 cells)

RN 142008-29-5 HCAPLUS
CN Kinase (phosphorylating), protein, A (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **50-99-7**, D-Glucose, biological studies **128606-20-2**, PACAP-38
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(protein kinase A inhibition in relation to contribution of cAMP for PACAP-induced insulin secretion in HIT-T15 cells)
RN 50-99-7 HCAPLUS
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

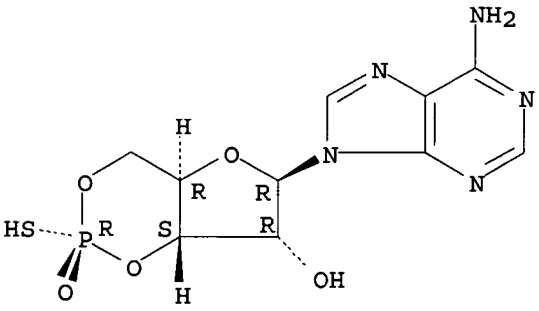
Absolute stereochemistry.



RN 128606-20-2 HCAPLUS
CN Pituitary adenylate cyclase-activating peptide-38 (9CI) (CA INDEX NAME)

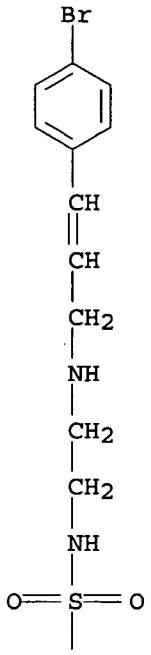
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **73208-40-9 127243-85-0**, H89 **129735-00-8**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(protein kinase A inhibition in relation to contribution of cAMP for PACAP-induced insulin secretion in HIT-T15 cells)
RN 73208-40-9 HCAPLUS
CN Adenosine, cyclic 3',5'-[hydrogen [P(R)]-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.

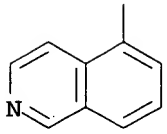


RN 127243-85-0 HCAPLUS
CN 5-Isoquinolinesulfonamide, N-[2-[[3-(4-bromophenyl)-2-propenyl]amino]ethyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

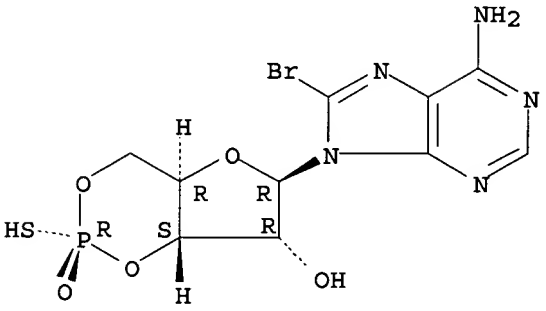


PAGE 2-A



RN 129735-00-8 HCAPLUS
CN Adenosine, 8-bromo-, cyclic 3',5'-[hydrogen [P(R)]-phosphorothioate] (9CI) (CA INDEX NAME)

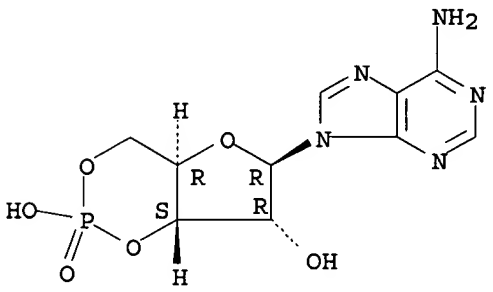
Absolute stereochemistry.



IT **60-92-4**, CAMP **9004-10-8**, Insulin, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL

(Biological study); PROC (Process)
(protein kinase A inhibition in relation to contribution of cAMP for PACAP-induced insulin secretion in HIT-T15 cells)
RN 60-92-4 HCAPLUS
CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 9004-10-8 HCAPLUS
CN Insulin (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L63 ANSWER 13 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1998:811028 HCAPLUS
DOCUMENT NUMBER: 130:235724
TITLE: Hypotension dilates pial arteries by KATP and Kca channel activation
AUTHOR(S): Armstead, William M.
CORPORATE SOURCE: Department of Anesthesia, The Children's Hospital of Philadelphia, Philadelphia, PA, 19104, USA
SOURCE: Brain Research (**1999**), 816(1), 158-164
CODEN: BRREAP; ISSN: 0006-8993
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Hypotension induced pial artery dilation is prostaglandin-dependent in the newborn pig. Prostaglandins, in turn, elicit vasodilation through cGMP and cAMP dependent mechanisms and K+ channel activation contributes to cyclic nucleotide induced vasodilation. The present study was designed to characterize the role of ATP sensitive (KATP) and calcium sensitive (Kca) channel activation in hypotension induced pial artery dilation in newborn pigs equipped with a closed cranial window. Glibenclamide and iberiotoxin, KATP and Kca channel antagonists, attenuated hypotension induced dilation (36±1 vs. 14±2% before and after iberiotoxin). Combined administration of these K+ channel antagonists eliminated the vascular response. Hypotension induced dilation was associated with elevated cerebrospinal fluid (CSF) cAMP but not cGMP concentration (1023±29 vs. 1566±39 fmol/mL for cAMP). L-NNA, a nitric oxide (NO) synthase inhibitor, and Rp 8-Br cGMPs, a protein kinase G inhibitor, had no effect but **Rp 8-Br cAMPs**, a protein kinase A inhibitor, attenuated hypotensive dilation (35±1 vs. 16±2% before and after **Rp 8-Br cAMPs**). Dilation by the cAMP analog 8-Bromo cAMP (10-8, 10-6 M) was attenuated by glibenclamide and iberiotoxin (8±1 and 17±1 vs. 4±1 and 9±1% before and after glibenclamide). These data show that both KATP and Kca

channel activation contribute to hypotension induced dilation. These data suggest that dilation during hypotension results from the sequential release of prostaglandins and cAMP, which, in turn, activates both the KATP and Kca channel.

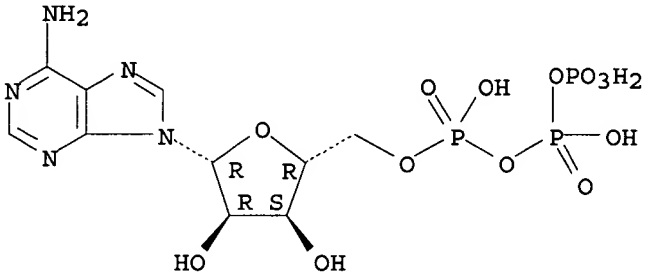
IT **10102-43-9**, Nitric oxide, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(ATP sensitive and calcium sensitive potassium channel activation in hypotension-induced pial artery dilation does not involve nitric oxide in newborn pigs)

RN 10102-43-9 HCAPLUS
CN Nitrogen oxide (NO) (8CI, 9CI) (CA INDEX NAME)

IT **56-65-5**, 5' ATP, biological studies **7440-70-2**, Calcium, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(ATP sensitive and calcium sensitive potassium channel activation in hypotension-induced pial artery dilation in newborn pigs)

RN 56-65-5 HCAPLUS
CN Adenosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

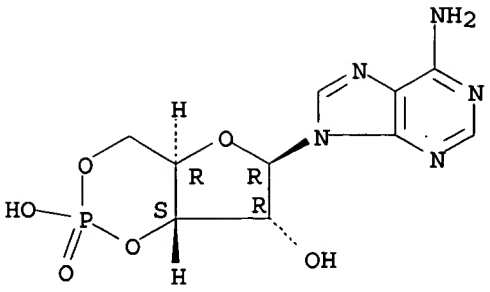


RN 7440-70-2 HCAPLUS
CN Calcium (8CI, 9CI) (CA INDEX NAME)

IT **60-92-4**, CAMP **142008-29-5**, Protein kinase A
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(in ATP sensitive and calcium sensitive potassium channel activation in hypotension-induced pial artery dilation in newborn pigs)

RN 60-92-4 HCAPLUS
CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 142008-29-5 HCAPLUS
CN Kinase (phosphorylating), protein, A (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L63 ANSWER 14 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1998:719272 HCAPLUS
DOCUMENT NUMBER: 130:490
TITLE: Use of compounds inhibiting cAMP-dependent protein kinase A as immunomodulating agents for treating immunosuppressive diseases
INVENTOR(S): Tasken, Kjetil; Aandahl, Einar Martin; Aukrust, Pal; Skalhegg, Bjorn S.; Muller, Fredrik; Froland, Stig; Hansson, Vidar
PATENT ASSIGNEE(S): Norway
SOURCE: PCT Int. Appl., 56 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9848809	A1	19981105	WO 1998-NO134	19980429 <--
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
CA 2288215	AA	19981105	CA 1998-2288215	19980429 <--
AU 9870865	A1	19981124	AU 1998-70865	19980429 <--
AU 738674	B2	20010920		
EP 1024809	A1	20000809	EP 1998-917808	19980429 <--
EP 1024809	B1	20020306		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2002501499	T2	20020115	JP 1998-546856	19980429 <--
NZ 501181	A	20020301	NZ 1998-501181	19980429 <--
AT 213944	E	20020315	AT 1998-917808	19980429 <--
PT 1024809	T	20020731	PT 1998-917808	19980429 <--
ES 2171018	T3	20020816	ES 1998-917808	19980429 <--

NO 9905269 A 19991213 NO 1999-5269 19991028 <--
PRIORITY APPLN. INFO.: NO 1997-1997 A 19970429 <--
WO 1998-NO134 W 19980429 <--

AB Several compds. capable of inhibiting cAMP-dependent protein kinase A (PKA) are used to produce a medicament increasing T-cell proliferation in patients with immunosuppressive diseases. Inhibitors include cAMP analogs, ribozymes, antisense DNA, and peptides binding to the anchoring region of PKA. In T-cells from normal blood donors, TCR/CD3-stimulated T-cell proliferation was inhibited by a cAMP agonist (Sp-8-Br-cAMPS). This effect was almost completely reversed by increasing concns. of complementary antagonist (**Rp-8-Br-cAMPS** (I)). However, antagonist alone did not alter proliferation of normal T-cells. In contrast, when the TCR/CD3-induced proliferation of T-cells from a HIV-infected patient was investigated, I not only reversed the effect of the complementary agonist, but further increased the proliferation above the levels in untreated cells. When the effect of the antagonist alone was assessed in T-cells from HIV-infected patients, there was a concentration-dependent increase in TCR/CD3-induced proliferation that was more than 2-fold at higher concns. T-cells responding poorly to TCR/CD3 stimulation benefitted most from cAMP antagonist treatment.

IT **142008-29-5**, CAMP-dependent protein kinase A
RL: ADV (Adverse effect, including toxicity); BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(Type I; cAMP-dependent protein kinase A inhibitors as immunomodulating agents for treating immunosuppressive diseases)

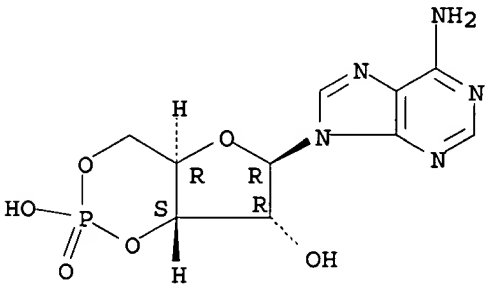
RN 142008-29-5 HCAPLUS
CN Kinase (phosphorylating), protein, A (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT **60-92-4**, CAMP
RL: BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(antagonists; cAMP-dependent protein kinase A inhibitors as immunomodulating agents for treating immunosuppressive diseases)

RN 60-92-4 HCAPLUS
CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

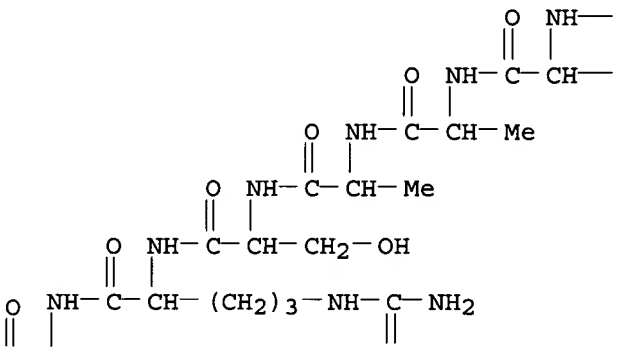
Absolute stereochemistry.



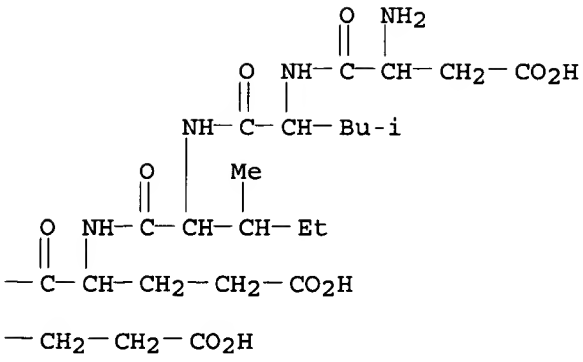
IT **143277-30-9 215597-64-1 215597-71-0 215722-04-6**
RL: BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(as anchoring-disrupting peptide; cAMP-dependent protein kinase A inhibitors as immunomodulating agents for treating immunosuppressive

diseases)
RN 143277-30-9 HCAPLUS
CN L-Tyrosine, L-α-aspartyl-L-leucyl-L-isoleucyl-L-α-glutamyl-L-α-glutamyl-L-alanyl-L-alanyl-L-seryl-L-arginyl-L-isoleucyl-L-valyl-L-α-aspartyl-L-alanyl-L-valyl-L-isoleucyl-L-α-glutamyl-L-glutaminyl-L-valyl-L-lysyl-L-alanyl-L-alanyl- (9CI) (CA INDEX NAME)

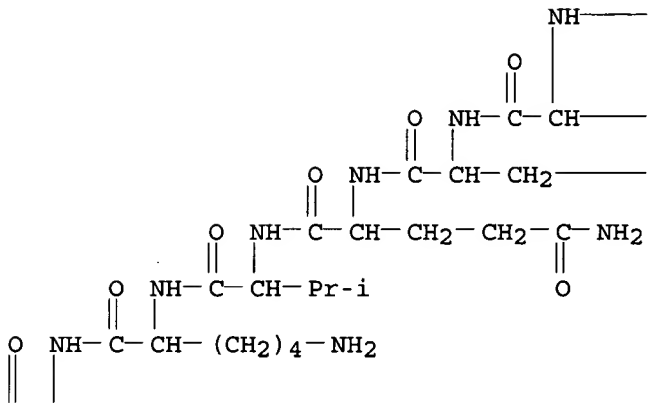
PAGE 1-B



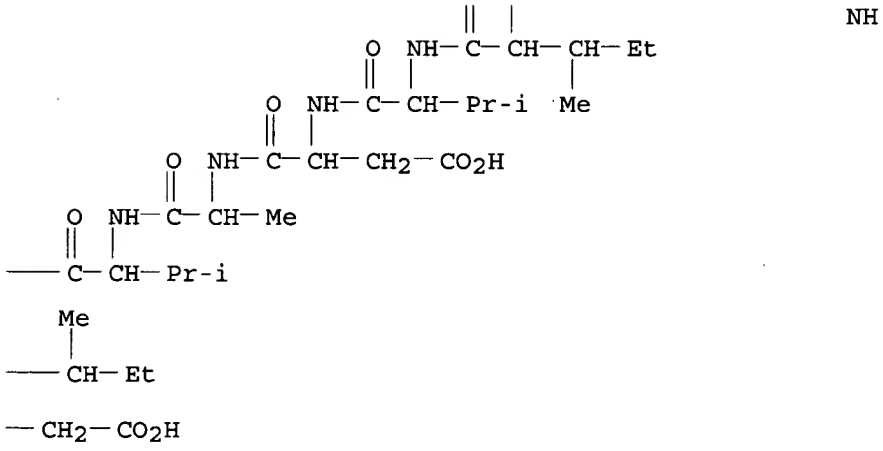
PAGE 1-C



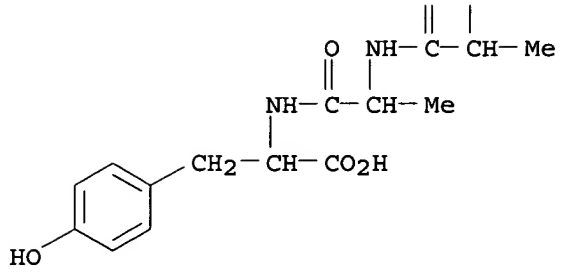
PAGE 2-A



PAGE 2-B



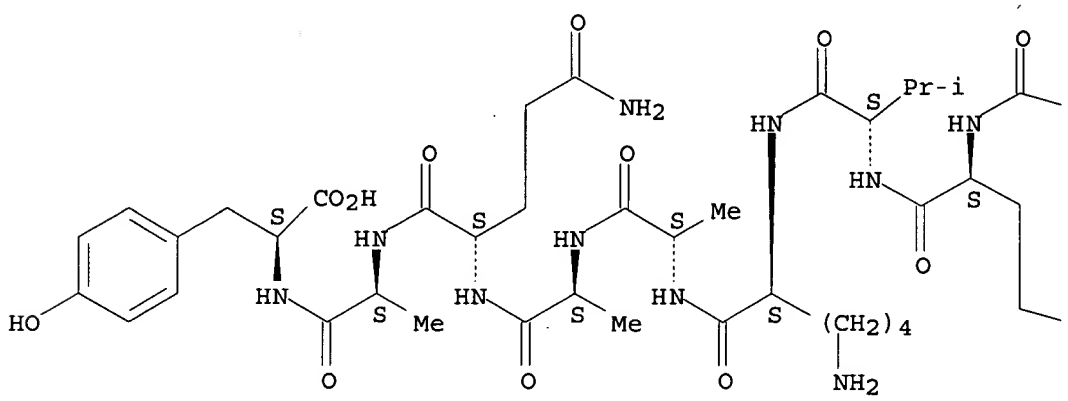
PAGE 3-A



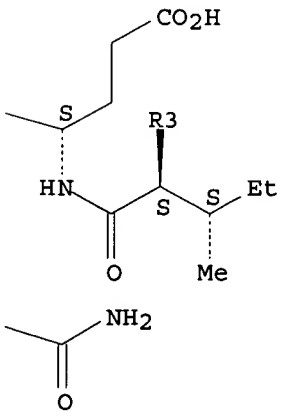
RN 215597-64-1 HCAPLUS
CN L-Tyrosine, L-α-aspartyl-L-leucyl-L-isoleucyl-L-α-glutamyl-L-α-glutamyl-L-alanyl-L-alanyl-L-seryl-L-arginyl-L-isoleucyl-L-valyl-L-α-aspartyl-L-alanyl-L-valyl-L-isoleucyl-L-α-glutamyl-L-glutaminyl-L-valyl-L-lysyl-L-alanyl-L-alanyl-L-glutaminyl-L-alanyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 1-B



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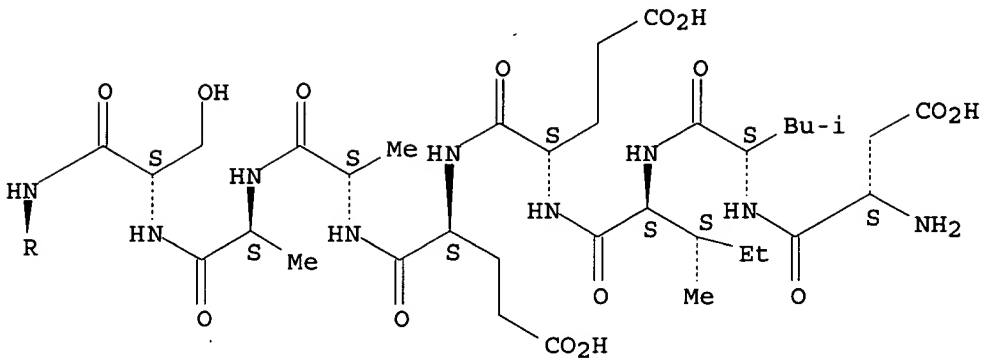
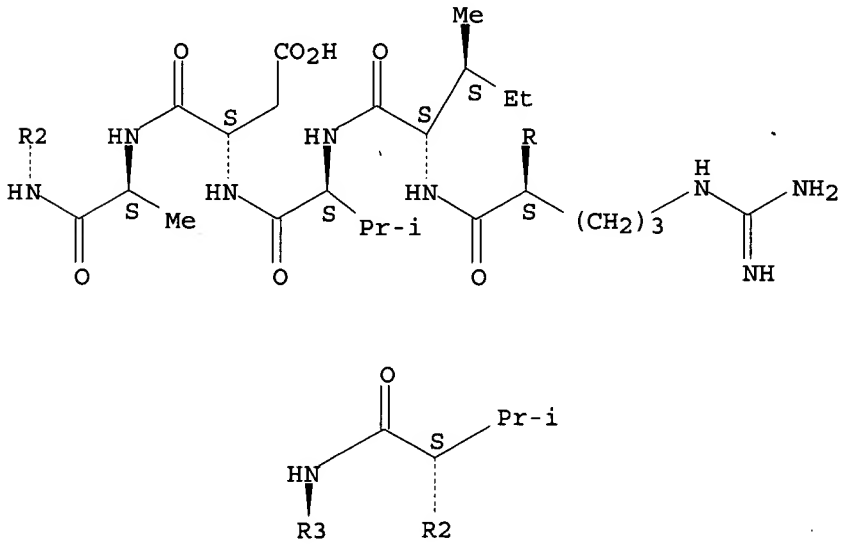


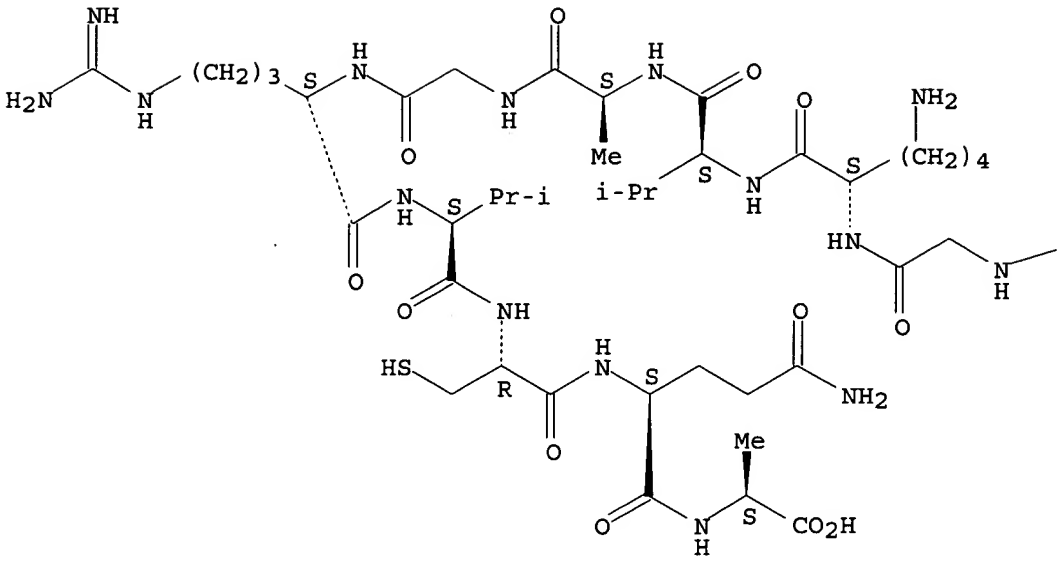
PAGE 3-A



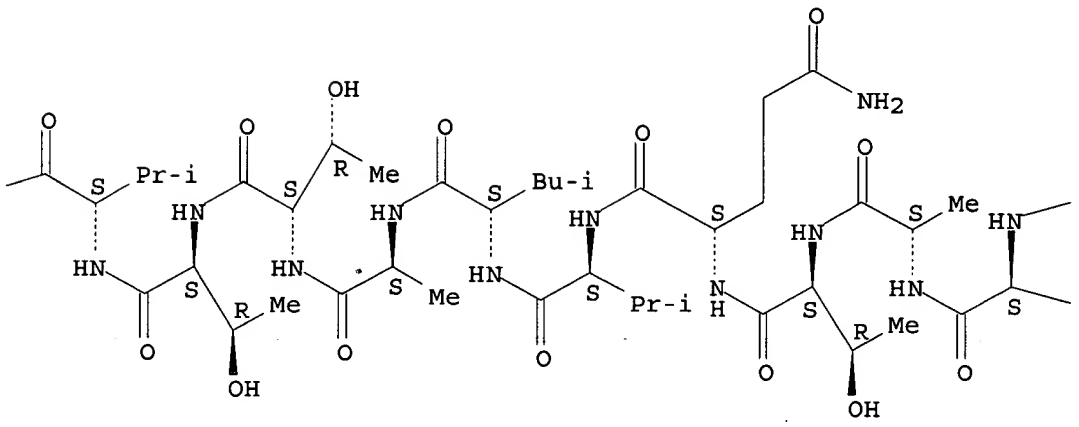
RN 215597-71-0 HCAPLUS
CN L-Alanine, L-glutaminyl-L-valyl-L-isoleucyl-L-seryl-L-α-glutamyl-L-alanyl-L-threonyl-L-glutaminyl-L-valyl-L-leucyl-L-alanyl-L-threonyl-L-threonyl-L-valylglycyl-L-lysyl-L-valyl-L-alanylglycyl-L-arginyl-L-valyl-L-cysteinyl-L-glutaminyl- (9CI) (CA INDEX NAME)

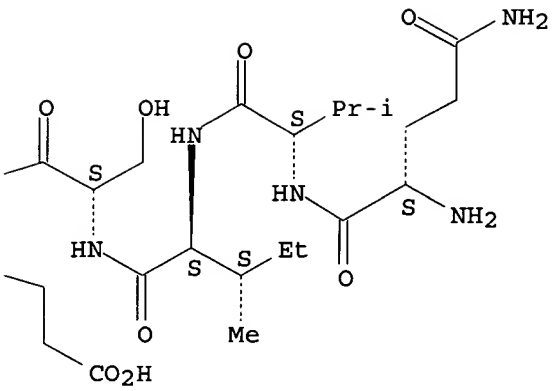
Absolute stereochemistry.

PAGE 1-A



PAGE 1-B

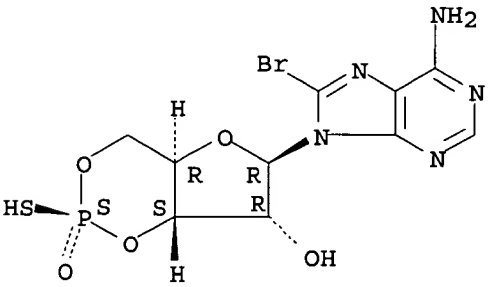




RN 215722-04-6 HCAPLUS
CN L-Leucine, L-valyl-L-glutaminylglycyl-L-asparaginyl-L-threonyl-L-α-aspartyl-L-α-glutamyl-L-alanyl-L-glutaminyl-L-α-glutamyl-L-α-glutamyl-L-leucyl-L-alanyl-L-tryptophyl-L-lysyl-L-isoleucyl-L-alanyl-L-lysyl-L-methionyl-L-isoleucyl-L-valyl-L-seryl-L-α-aspartyl-L-valyl-L-methionyl-L-glutaminyl-L-glutaminyl-L-alanyl-L-histidyl-L-histidyl-L-α-aspartyl-L-glutaminyl-L-prolyl-L-leucyl-L-α-glutamyl-L-lysyl-L-seryl-L-threonyl-L-lysyl- (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **127634-20-2**
RL: ADV (Adverse effect, including toxicity); BSU (Biological study, unclassified); BIOL (Biological study)
(as cAMP agonist, TCR/CD3-stimulated proliferation of T-cells inhibition by; cAMP-dependent protein kinase A inhibitors as immunomodulating agents for treating immunosuppressive diseases)
RN 127634-20-2 HCAPLUS
CN Adenosine, 8-bromo-, cyclic 3',5'-[hydrogen (S)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.

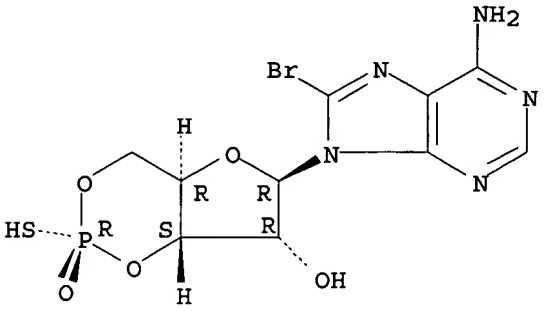


IT **129735-00-8 129735-01-9 142754-27-6**
156816-36-3 215597-30-1 215597-33-4
RL: BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)

(as cAMP antagonist; cAMP-dependent protein kinase A inhibitors as immunomodulating agents for treating immunosuppressive diseases)

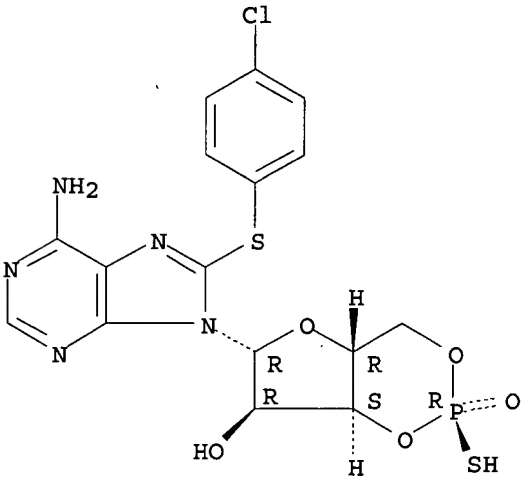
RN 129735-00-8 HCAPLUS
CN Adenosine, 8-bromo-, cyclic 3',5'-[hydrogen [P(R)]-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



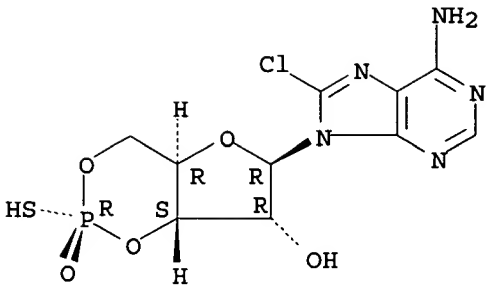
RN 129735-01-9 HCAPLUS
CN Adenosine, 8-[(4-chlorophenyl)thio]-, cyclic 3',5'-[hydrogen (R)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



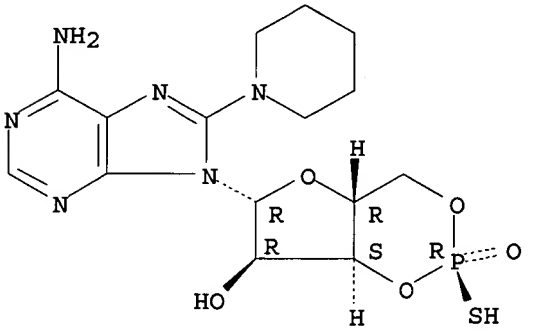
RN 142754-27-6 HCAPLUS
CN Adenosine, 8-chloro-, cyclic 3',5'-[hydrogen (R)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



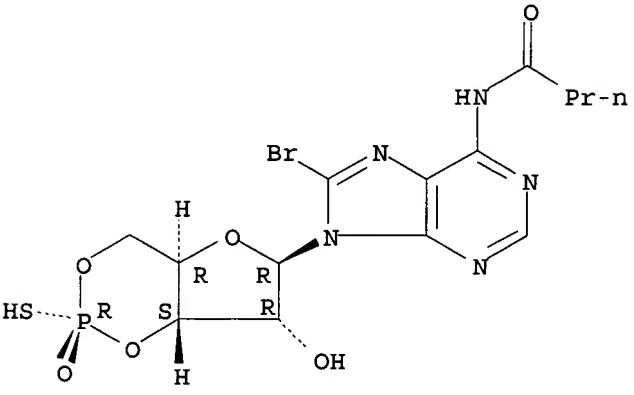
RN 156816-36-3 HCAPLUS
CN Adenosine, 8-(1-piperidinyl)-, cyclic 3',5'-[hydrogen (R)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



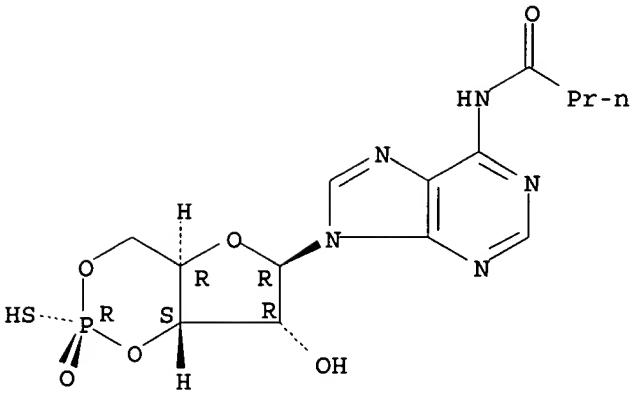
RN 215597-30-1 HCAPLUS
CN Adenosine, 8-bromo-N-(1-oxobutyl)-, cyclic 3',5'-[hydrogen (R)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 215597-33-4 HCAPLUS
CN Adenosine, N-(1-oxobutyl)-, cyclic 3',5'-[hydrogen (R)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **215662-76-3 215662-77-4**
RL: BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(as hammerhead ribozyme; cAMP-dependent protein kinase A inhibitors as immunomodulating agents for treating immunosuppressive diseases)
RN 215662-76-3 HCAPLUS
CN RNA, (G-U-A-C-U-G-C-C-A-C-U-G-A-U-G-A-G-U-C-C-G-U-G-A-G-G-A-C-G-A-A-A-C-U-C-C-A-U-G) (9CI) (CA INDEX NAME)

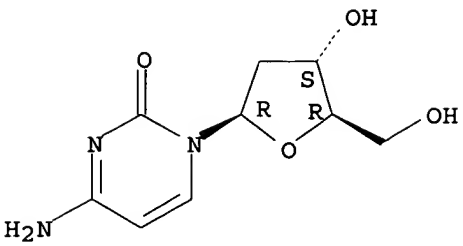
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 215662-77-4 HCAPLUS
CN RNA, (G-G-C-G-G-U-A-C-U-G-C-C-A-C-U-G-A-U-G-A-G-U-C-C-G-U-G-A-G-G-A-C-G-A-A-A-A-C-U-C-C-A-U-G-G-A) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **215662-78-5 215662-79-6**
RL: BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(as sequence-specific antisense nucleotide; cAMP-dependent protein kinase A inhibitors as immunomodulating agents for treating immunosuppressive diseases)
RN 215662-78-5 HCAPLUS
CN DNA, d(G-T-A-C-T-G-C-C-A-G-A-C-T-C-C-A-T-G) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 215662-79-6 HCAPLUS
CN DNA, d(G-G-C-G-G-T-A-C-T-G-C-C-A-G-A-C-T-C-C-A-T-G-G-T) (9CI) (CA INDEX NAME)

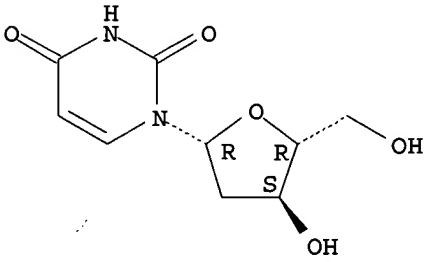
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **951-77-9D**, analogs **951-78-0D**, analogs
RL: BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(stabilizing hammerhead ribozyme; cAMP-dependent protein kinase A inhibitors as immunomodulating agents for treating immunosuppressive diseases)
RN 951-77-9 HCAPLUS
CN Cytidine, 2'-deoxy- (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



RN 951-78-0 HCAPLUS
CN Uridine, 2'-deoxy- (6CI, 8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



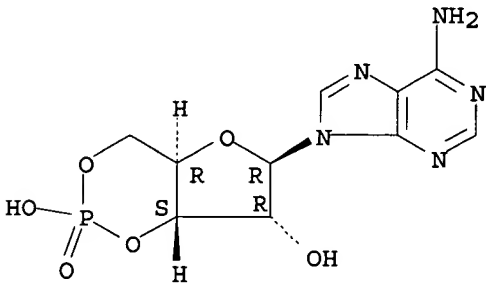
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L63 ANSWER 15 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1998:572406 HCAPLUS
DOCUMENT NUMBER: 129:285575
TITLE: Quantitative structure-activity relations for the relative affinities of cAMP derivatives with large substituents in positions 2 and 8 for the four different regulatory sites of a protein kinase
AUTHOR(S): Liauw, Susanne; Iwitzki, Franz; Muresan, Sorel; Bologa, Cristian; Chiriac, Adrian; Kurunczi, Ludovic; Simon, Zeno; Jastorff, Bernd
CORPORATE SOURCE: Dep. Bioorganic Chem., Univ. Bremen, Bremen, D-2000, Germany
SOURCE: Revue Roumaine de Chimie (**1998**), 43(3), 241-253
CODEN: RRCHAX; ISSN: 0035-3930
PUBLISHER: Editura Academiei Romane
DOCUMENT TYPE: Journal
LANGUAGE: English
AB QSAR's by the MTD-method for a series of 32 derivs. of cAMP with large substituents in position 8 and for a series of 21 derivs. with large substituents in position 2 are obtained. Thiophosphoric acid derivs. are also included. As structural parameters, the relative nitrogen base lipophilicity, the presence of an equatorial or axial S atom and the presence of aliphatic amino group, protonated at pH = 7 are considered. Satisfactory correlational results, including a cross-validation like procedure, are obtained in most cases. The results emphasize structural features important for binding to four sites (AI, BI, AII, and BII) of two different protein phosphokinases (cAKI and cAKII). The synthesis and characterization of eight new compds. are also described.
IT **9026-43-1**, Protein kinase

RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(cAMP dependent; quant. structure-activity relations for the relative affinities of cAMP derivs. for protein kinase regulatory sites)
RN 9026-43-1 HCAPLUS
CN Kinase (phosphorylating), protein serine/threonine (9CI) (CA INDEX NAME)

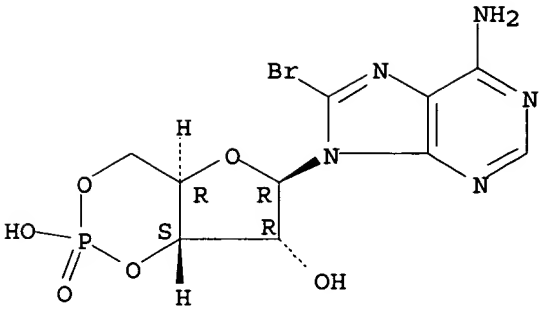
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **60-92-4**, Camp **23583-48-4 31357-06-9**
31966-52-6 33823-17-5 39023-65-9
39824-30-1 41941-56-4 41941-66-6
53303-84-7 61363-29-9 71122-68-4
76461-19-3 82927-67-1 82927-68-2, Adenosine, 8-[(4-aminobutyl)amino]-, cyclic 3',5'-(hydrogen phosphate)
82927-69-3 120912-54-1 124844-92-4
124854-63-3 127634-22-4 127634-23-5
129693-14-7 129693-17-0 129693-18-1, 1H-Benzimidazole, 5,6-dibromo-1-[3,5-O-(mercaptophosphinylidene)-β-D-ribofuranosyl]-, (R)- **142754-27-6 142754-28-7**
142754-30-1, 1H-Benzimidazole, 5,6-dinitro-1-(3,5-O-phosphinico-β-D-ribofuranosyl)- **142754-31-2 145757-00-2**
156816-35-2 156816-36-3, Adenosine, 8-(1-piperidinyl)-, cyclic 3',5'-(hydrogen phosphorothioate), (R)- **214272-02-3**
214272-03-4 214272-04-5 214272-05-6
214272-06-7 214272-07-8 214272-08-9
214272-09-0 214272-10-3 214272-11-4
214272-12-5 214272-13-6 214272-14-7
214272-15-8 214272-16-9 214272-17-0
214272-18-1 214276-80-9 214276-87-6
214276-94-5
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(quant. structure-activity relations for the relative affinities of cAMP derivs. for protein kinase regulatory sites)
RN 60-92-4 HCAPLUS
CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



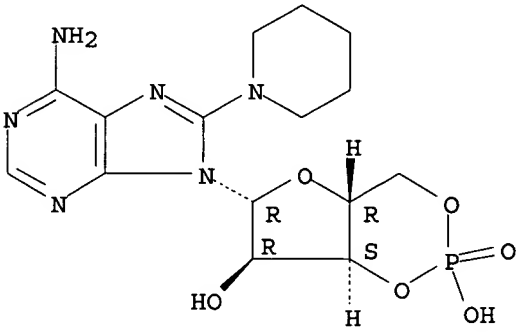
RN 23583-48-4 HCAPLUS
CN Adenosine, 8-bromo-, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



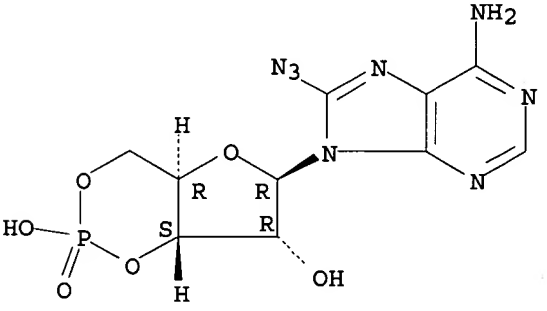
RN 31357-06-9 HCAPLUS
CN Adenosine, 8-(1-piperidinyl)-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



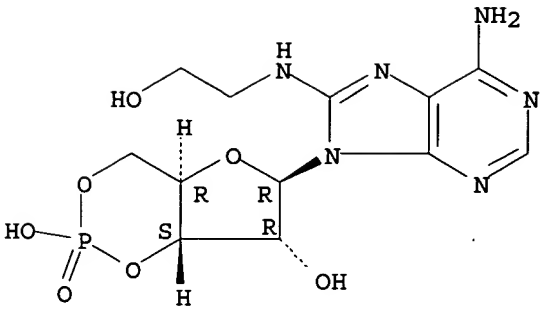
RN 31966-52-6 HCAPLUS
CN Adenosine, 8-azido-, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



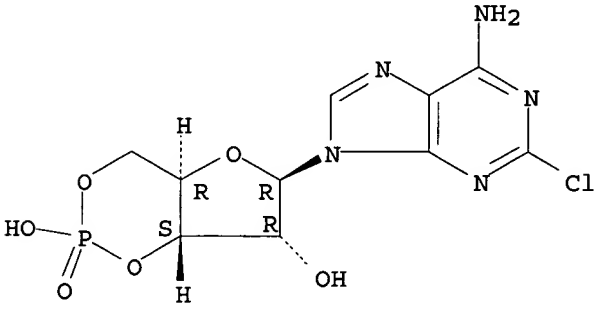
RN 33823-17-5 HCAPLUS
CN Adenosine, 8-[(2-hydroxyethyl)amino]-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



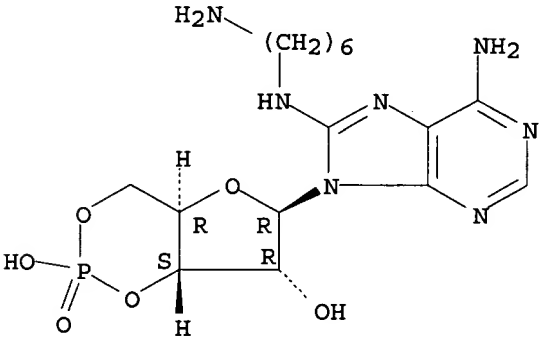
RN 39023-65-9 HCAPLUS
CN Adenosine, 2-chloro-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



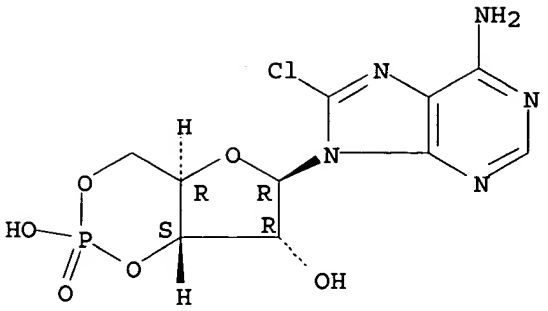
RN 39824-30-1 HCAPLUS
CN Adenosine, 8-[(6-aminohexyl)amino]-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



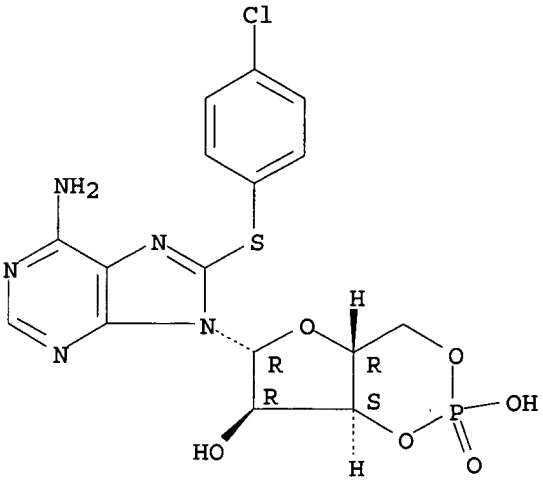
RN 41941-56-4 HCAPLUS
CN Adenosine, 8-chloro-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



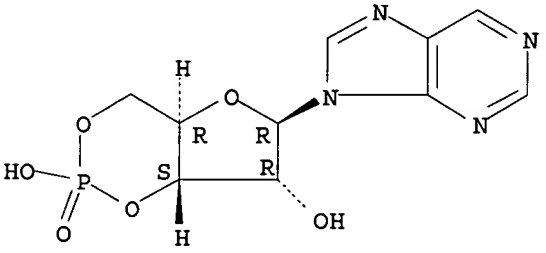
RN 41941-66-6 HCAPLUS
CN Adenosine, 8-[(4-chlorophenyl)thio]-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



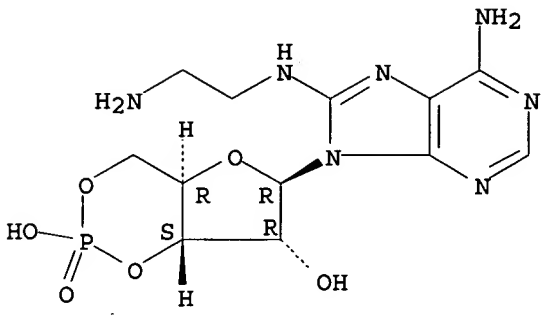
RN 53303-84-7 HCAPLUS
CN 9H-Purine, 9-(3,5-O-phosphinico-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



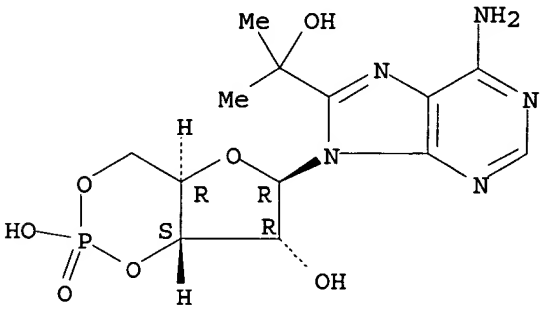
RN 61363-29-9 HCAPLUS
CN Adenosine, 8-[(2-aminoethyl)amino]-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



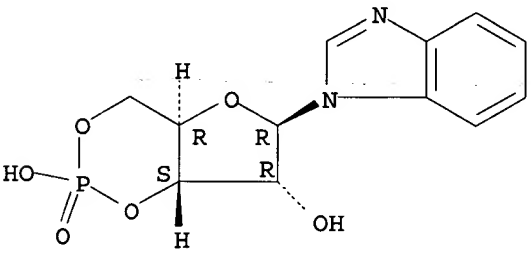
RN 71122-68-4 HCAPLUS
CN Adenosine, 8-(1-hydroxy-1-methylethyl)-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



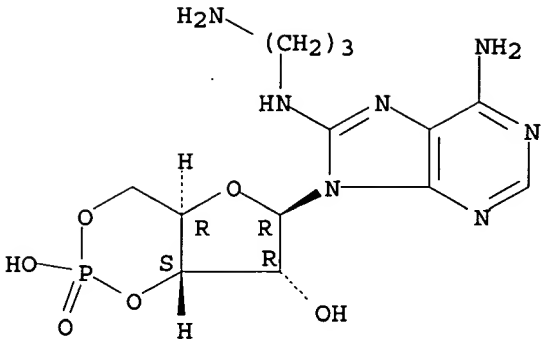
RN 76461-19-3 HCAPLUS
CN 1H-Benzimidazole, 1-(3,5-O-phosphinico-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



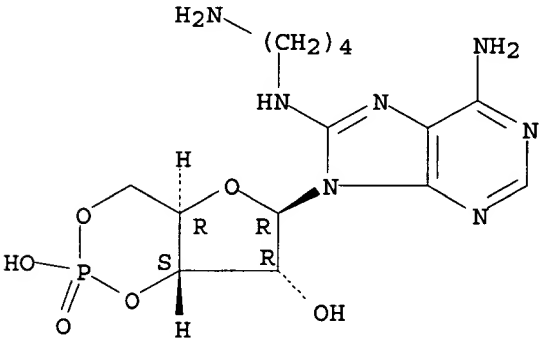
RN 82927-67-1 HCAPLUS
CN Adenosine, 8-[(3-aminopropyl)amino]-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



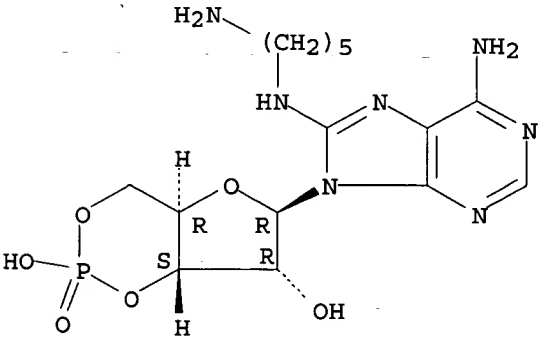
RN 82927-68-2 HCAPLUS
CN Adenosine, 8-[(4-aminobutyl)amino]-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



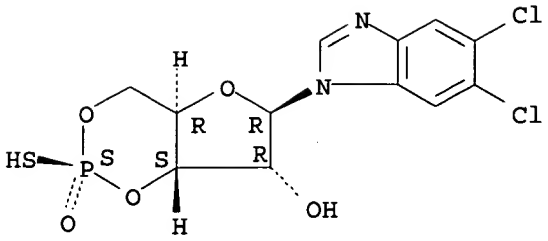
RN 82927-69-3 HCAPLUS
CN Adenosine, 8-[(5-aminopentyl)amino]-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



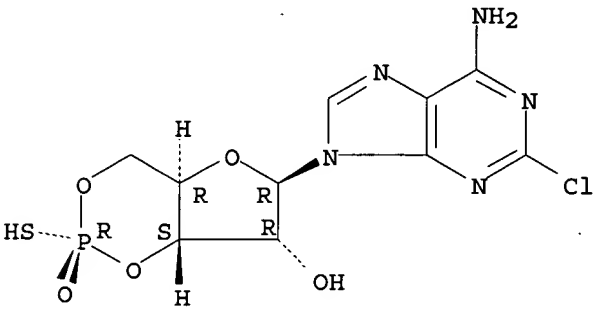
RN 120912-54-1 HCAPLUS
CN 1H-Benzimidazole, 5,6-dichloro-1-[3,5-O-[(S)-mercaptophosphinylidene]-β-D-ribofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



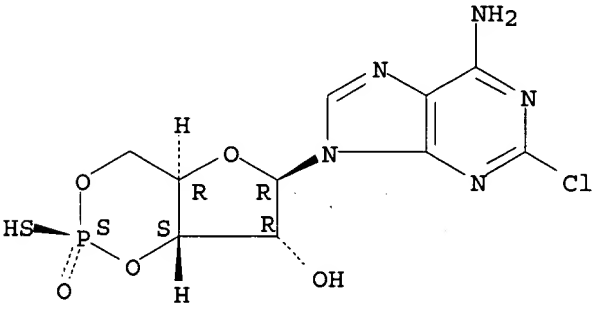
RN 124844-92-4 HCAPLUS
CN Adenosine, 2-chloro-, cyclic 3',5'-[(R)-hydrogen phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



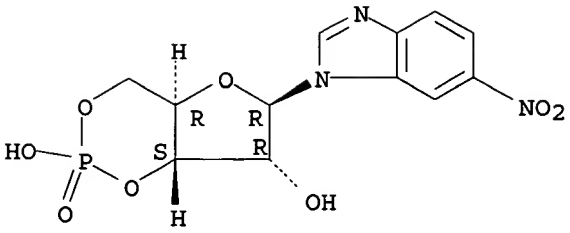
RN 124854-63-3 HCAPLUS
CN Adenosine, 2-chloro-, cyclic 3',5'-[(S)-hydrogen phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



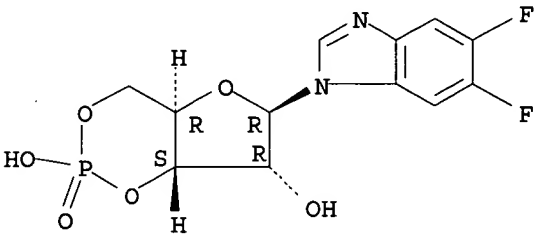
RN 127634-22-4 HCAPLUS
CN 1H-Benzimidazole, 6-nitro-1-(3,5-O-phosphinico-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



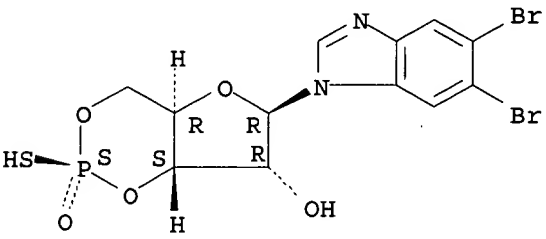
RN 127634-23-5 HCAPLUS
CN 1H-Benzimidazole, 5,6-difluoro-1-(3,5-O-phosphinico-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



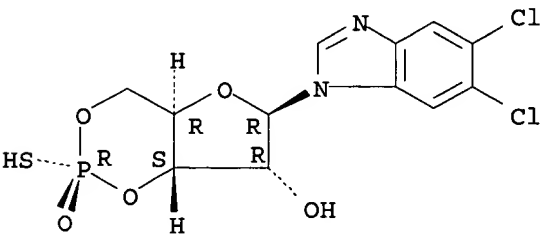
RN 129693-14-7 HCAPLUS
CN 1H-Benzimidazole, 5,6-dibromo-1-[3,5-O-[(S)-mercaptophosphinylidene]-β-D-ribofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 129693-17-0 HCAPLUS
CN 1H-Benzimidazole, 5,6-dichloro-1-[3,5-O-[(R)-mercaptophosphinylidene]-β-D-ribofuranosyl]- (9CI) (CA INDEX NAME)

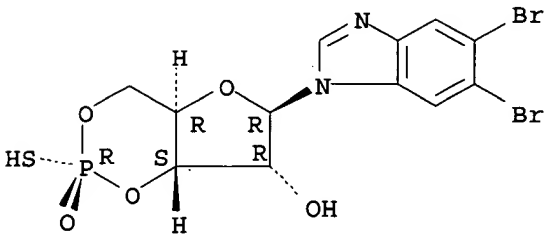
Absolute stereochemistry.



RN 129693-18-1 HCAPLUS

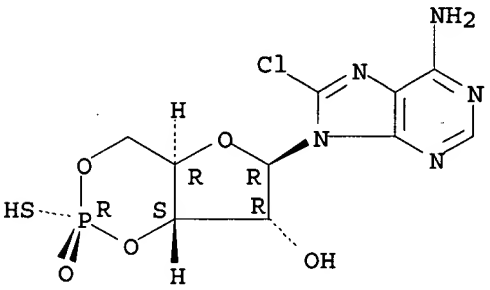
CN 1H-Benzimidazole, 5,6-dibromo-1-[3,5-O-[(R)-mercaptophosphinylidene]-β-D-ribofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



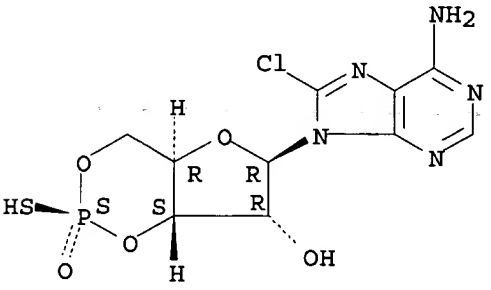
RN 142754-27-6 HCAPLUS
CN Adenosine, 8-chloro-, cyclic 3',5'-[hydrogen (R)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



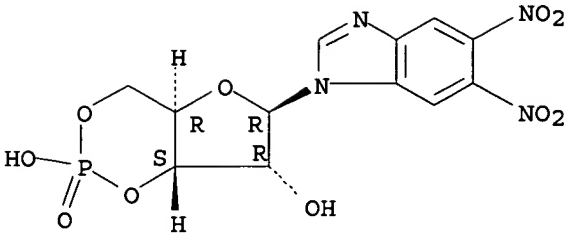
RN 142754-28-7 HCAPLUS
CN Adenosine, 8-chloro-, cyclic 3',5'-[hydrogen (S)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



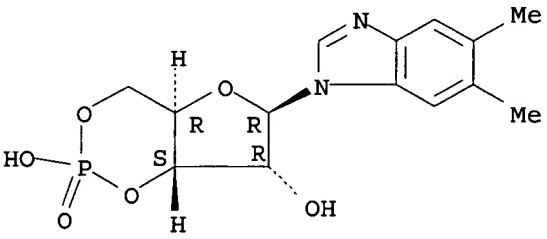
RN 142754-30-1 HCAPLUS
CN 1H-Benzimidazole, 5,6-dinitro-1-(3,5-O-phosphinico-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



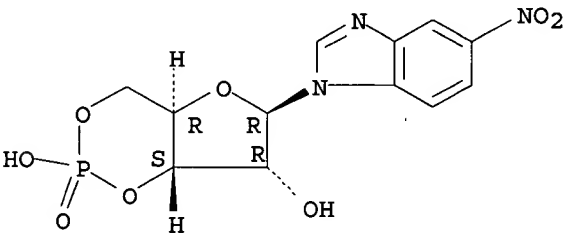
RN 142754-31-2 HCAPLUS
CN 1H-Benzimidazole, 5,6-dimethyl-1-(3,5-O-phosphinico-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



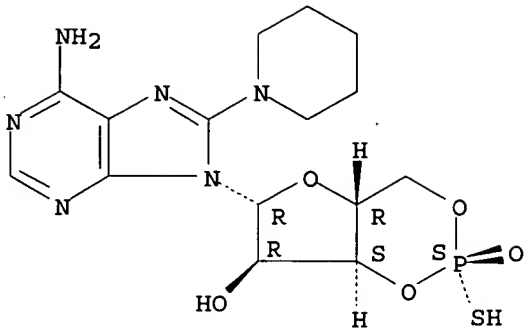
RN 145757-00-2 HCAPLUS
CN 1H-Benzimidazole, 5-nitro-1-(3,5-O-phosphinico-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



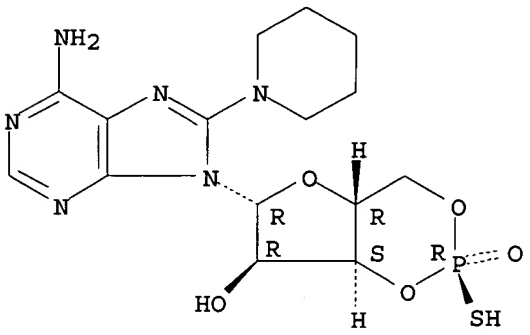
RN 156816-35-2 HCAPLUS
CN Adenosine, 8-(1-piperidinyl)-, cyclic 3',5'-[hydrogen (S)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



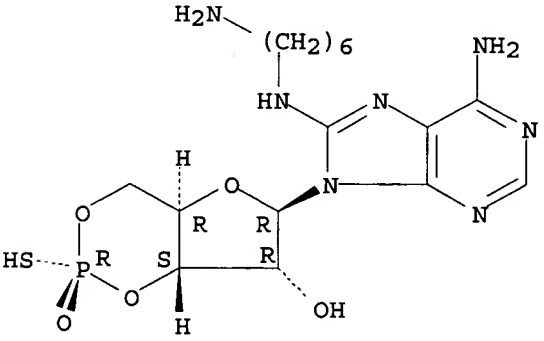
RN 156816-36-3 HCAPLUS
CN Adenosine, 8-(1-piperidinyl)-, cyclic 3',5'-[hydrogen (R)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



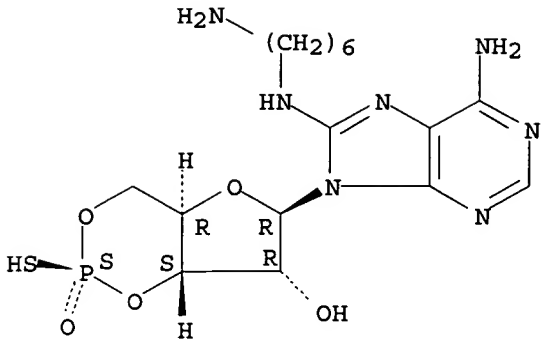
RN 214272-02-3 HCAPLUS
CN Adenosine, 8-[(6-aminohexyl)amino]-, cyclic 3',5'-[(R)-hydrogen phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



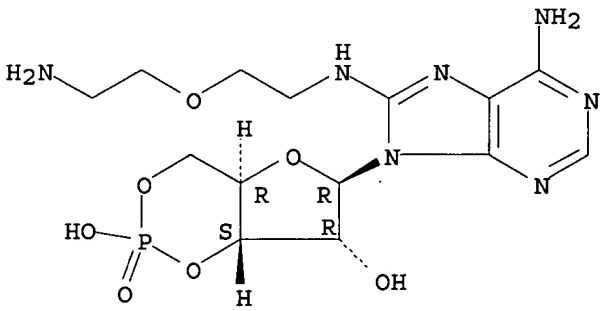
RN 214272-03-4 HCAPLUS
CN Adenosine, 8-[(6-aminohexyl)amino]-, cyclic 3',5'-[(S)-hydrogen phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



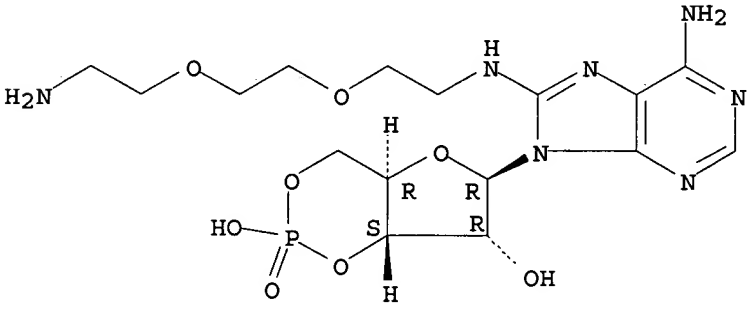
RN 214272-04-5 HCAPLUS
CN Adenosine, 8-[[2-(2-aminoethoxy)ethyl]amino]-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



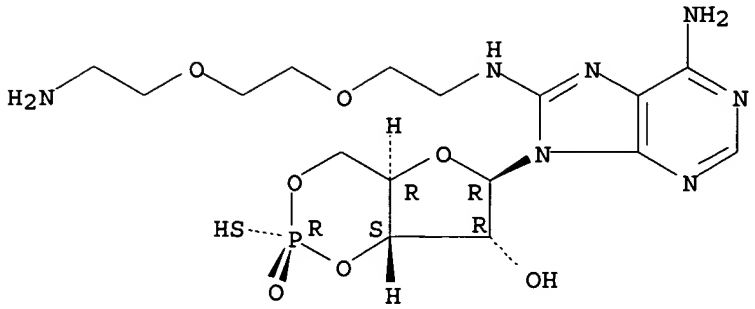
RN 214272-05-6 HCAPLUS
CN Adenosine, 8-[[2-[2-(2-aminoethoxy)ethoxy]ethyl]amino]-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



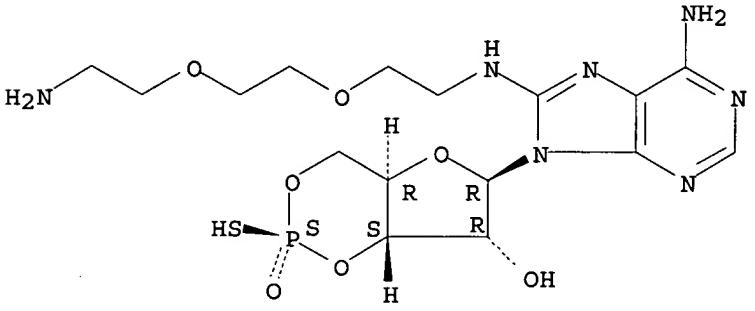
RN 214272-06-7 HCAPLUS
CN Adenosine, 8-[[2-[2-(2-aminoethoxy)ethoxy]ethyl]amino]-, cyclic 3',5'-[(R)-hydrogen phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



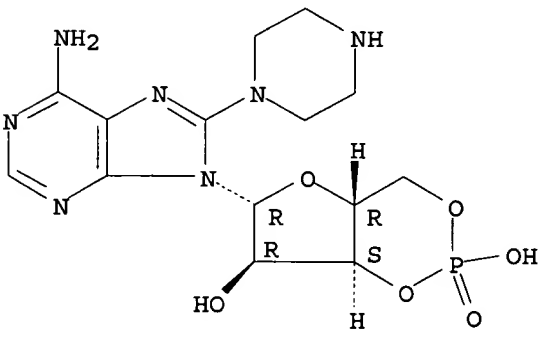
RN 214272-07-8 HCAPLUS
CN Adenosine, 8-[[2-[2-(2-aminoethoxy)ethoxy]ethyl]amino]-, cyclic 3',5'-[(S)-hydrogen phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



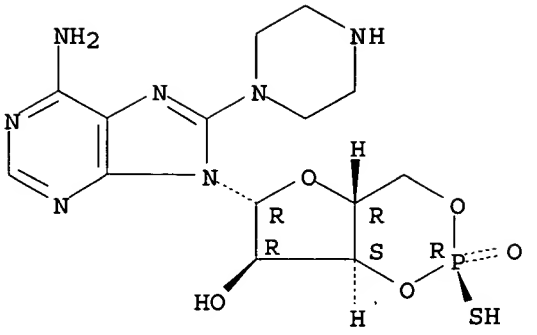
RN 214272-08-9 HCAPLUS
CN Adenosine, 8-(1-piperazinyl)-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



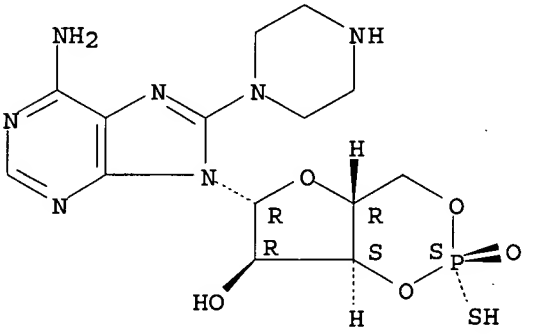
RN 214272-09-0 HCAPLUS
CN Adenosine, 8-(1-piperazinyl)-, cyclic 3',5'-[(R)-hydrogen phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



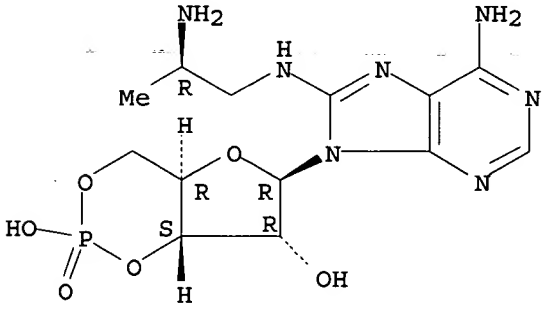
RN 214272-10-3 HCAPLUS
CN Adenosine, 8-(1-piperazinyl)-, cyclic 3',5'-[(S)-hydrogen phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



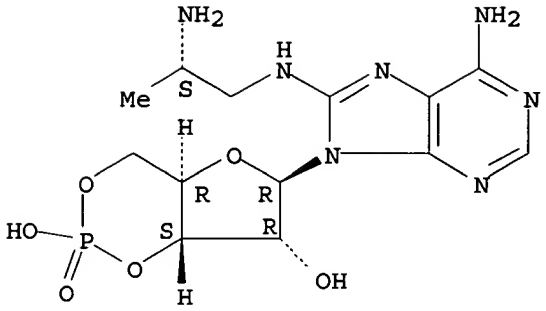
RN 214272-11-4 HCAPLUS
CN Adenosine, 8-[[(2R)-2-aminopropyl]amino]-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



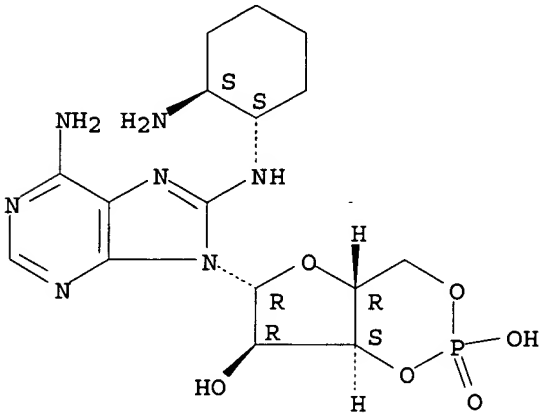
RN 214272-12-5 HCAPLUS
CN Adenosine, 8-[[(2S)-2-aminopropyl]amino]-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



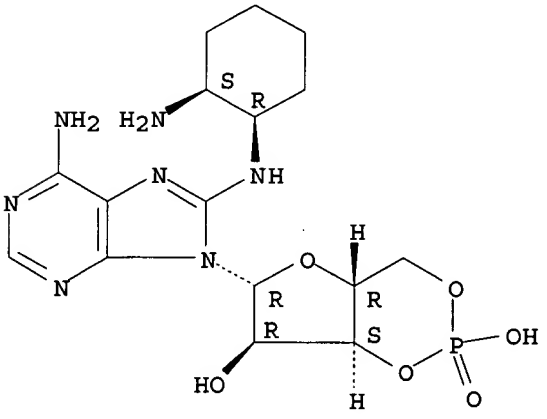
RN 214272-13-6 HCAPLUS
CN Adenosine, 8-[[(1S,2S)-2-aminocyclohexyl]amino]-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 214272-14-7 HCAPLUS
CN Adenosine, 8-[[(1R,2S)-2-aminocyclohexyl]amino]-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

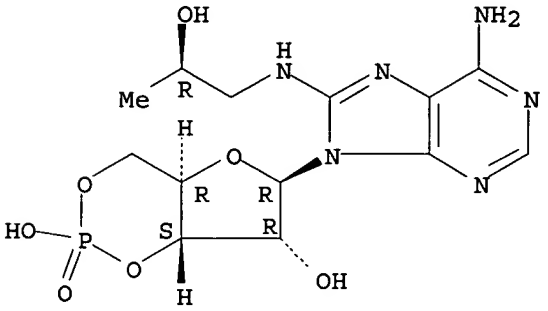
Absolute stereochemistry.



RN 214272-15-8 HCAPLUS

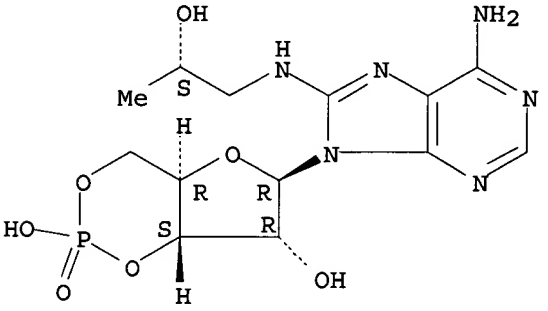
CN Adenosine, 8-[[(2R)-2-hydroxypropyl]amino]-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



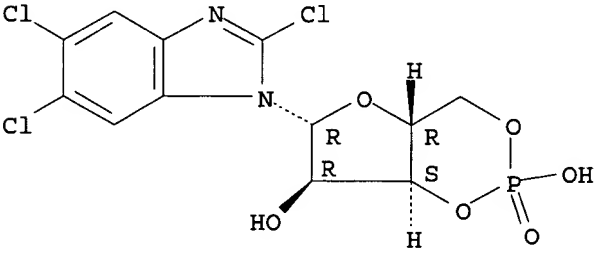
RN 214272-16-9 HCAPLUS
CN Adenosine, 8-[[(2S)-2-hydroxypropyl]amino]-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



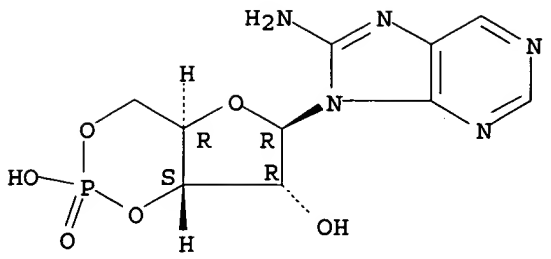
RN 214272-17-0 HCAPLUS
CN 1H-Benzimidazole, 2,5,6-trichloro-1-(3,5-O-phosphinico-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



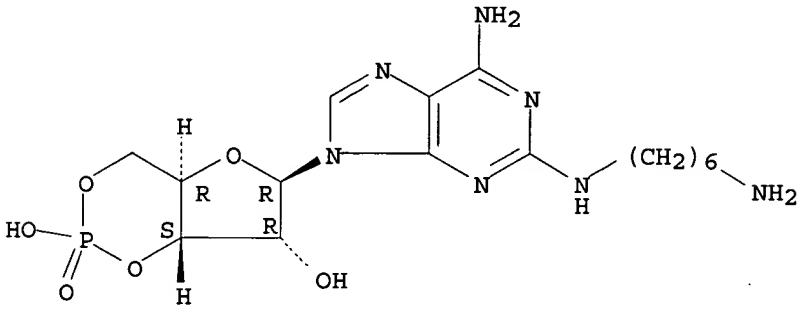
RN 214272-18-1 HCAPLUS
CN 9H-Purin-8-amine, 9-(3,5-O-phosphinico-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



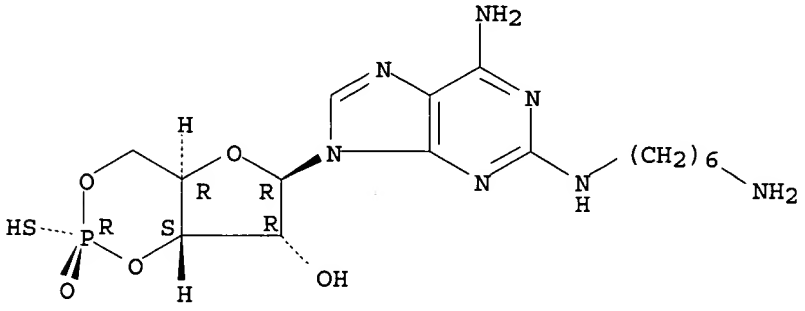
RN 214276-80-9 HCAPLUS
CN Adenosine, 2-[(6-aminohexyl)amino]-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



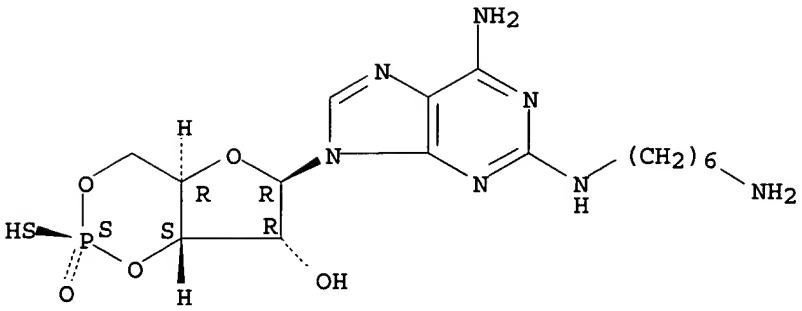
RN 214276-87-6 HCAPLUS
CN Adenosine, 2-[(6-aminohexyl)amino]-, cyclic 3',5'-[(R)-hydrogen phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 214276-94-5 HCAPLUS
CN Adenosine, 2-[(6-aminohexyl)amino]-, cyclic 3',5'-[(S)-hydrogen phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L63 ANSWER 16 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1998:434799 HCAPLUS
DOCUMENT NUMBER: 129:170140
TITLE: Protein kinase A type I antagonist restores immune responses of T cells from HIV-infected patients
AUTHOR(S): Aandahl, Einar Martin; Aukrust, Pal; Skalhegg, Bjorn S.; Muller, Fredrik; Froland, Stig S.; Hansson, Vidar; Tasken, Kjetil
CORPORATE SOURCE: Institute of Medical Biochemistry, University of Oslo, Oslo, N-0317, Norway
SOURCE: FASEB Journal (**1998**), 12(10), 855-862
CODEN: FAJOEC; ISSN: 0892-6638
PUBLISHER: Federation of American Societies for Experimental Biology
DOCUMENT TYPE: Journal
LANGUAGE: English

AB CAMP-dependent protein kinase A (PKA) type I has been established as an acute inhibitor of T cell activation. For this reason, we investigated the possible role of PKA type I in HIV-induced T cell dysfunction. T cells from HIV-infected patients have increased levels of cAMP and are more sensitive to inhibition by cAMP analog than are normal T cells. A PKA type I-selective antagonist increases the impaired proliferation of T cells from HIV-infected patients to normal or subnormal levels (up to 2.8-fold). Follow-up of patients after initiation of highly active antiretroviral treatment revealed that a majority of patients have a persistent T cell dysfunction that is normalized by incubation of T cells with **Rp-8-Br-cAMPS.** These observations imply that increased activation of PKA type I may contribute to the progressive T cell dysfunction in HIV infection and that PKA type I may be a potential target for immunomodulating therapy.

IT **142008-29-5**, Protein kinase A
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(protein kinase A type I antagonist restores immune responses of T cells from HIV-infected patients)

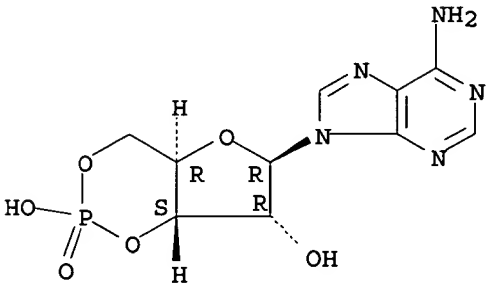
RN 142008-29-5 HCAPLUS
CN Kinase (phosphorylating), protein, A (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT **60-92-4**, CAMP
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(protein kinase A type I antagonist restores immune responses of T cells from HIV-infected patients)

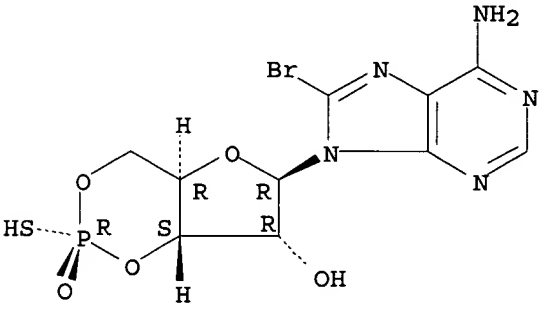
RN 60-92-4 HCAPLUS
CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **129735-00-8**
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(protein kinase A type I antagonist restores immune responses of T cells from HIV-infected patients)
RN 129735-00-8 HCAPLUS
CN Adenosine, 8-bromo-, cyclic 3',5'-[hydrogen [P(R)]-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



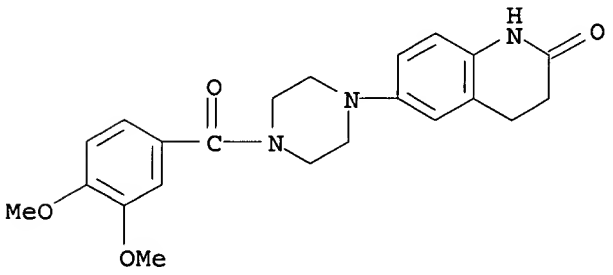
REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L63 ANSWER 17 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1998:380078 HCAPLUS
DOCUMENT NUMBER: 129:103984
TITLE: Effects of vesnarinone on nitric oxide synthesis in rat cardiac myocytes
AUTHOR(S): Kurosaki, Kenji; Ikeda, Uichi; Maeda, Yoshikazu; Shimpo, Masahisa; Ueno, Shuichi; Shimada, Kazuyuki
CORPORATE SOURCE: Dep. Cardiology, Jichi Medical School, Tochigi, 329-04, Japan
SOURCE: Cardiovascular Research (**1998**), 38(1), 192-197
CODEN: CVREAU; ISSN: 0008-6363
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The purpose of this study was to investigate the effects of vesnarinone on nitric oxide (NO) synthesis in cardiac myocytes. We measured the

accumulation of nitrite, a stable oxidation product of NO, and the expression of inducible NO synthase (iNOS) protein in cultured neonatal rat cardiac myocytes. Incubation of the cultures with interleukin-1β (IL-1β; 10 ng/mL) and tumor necrosis factor α (TNFα; 10 ng/mL) caused a marked increase in nitrite production Although vesnarinone by itself showed no effect on nitrite accumulation, it enhanced cytokine-induced nitrite production by cardiac myocytes in a dose-dependent manner. The effect of vesnarinone was completely abolished in the presence of NG-monomethyl-L-arginine or actinomycin D. The vesnarinone-induced nitrite production was accompanied by increased iNOS protein expression. In the presence of dibutyryl-cAMP, cytokine-induced nitrite accumulation was further increased, but the stimulatory effect of vesnarinone on nitrite accumulation was diminished. The effect of vesnarinone was also inhibited by **Rp-8-Br-cAMPS**, a competitive inhibitor of protein kinase A, in a dose-dependent manner. These findings indicate that vesnarinone increase NO synthesis in cytokine-stimulated cardiac myocytes, at lest partially through a cAMP-dependent pathway.

IT **81840-15-5**, Vesnarinone
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(vesnarinone effect on nitric oxide synthesis in cardiac myocytes)

RN 81840-15-5 HCAPLUS
CN Piperazine, 1-(3,4-dimethoxybenzoyl)-4-(1,2,3,4-tetrahydro-2-oxo-6-quinolinyl)- (9CI) (CA INDEX NAME)



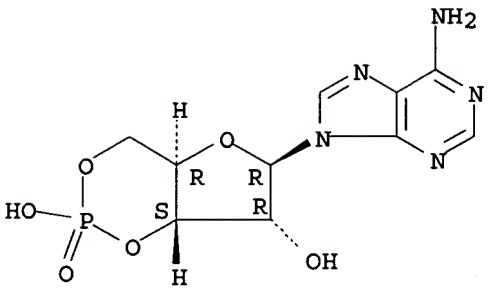
IT **10102-43-9**, Nitric oxide, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(vesnarinone effect on nitric oxide synthesis in cardiac myocytes)

RN 10102-43-9 HCAPLUS
CN Nitrogen oxide (NO) (8CI, 9CI) (CA INDEX NAME)

IT **60-92-4**, CAMP **142008-29-5**, Protein kinase A
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(vesnarinone effect on nitric oxide synthesis in cardiac myocytes)

RN 60-92-4 HCAPLUS
CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 142008-29-5 HCAPLUS
CN Kinase (phosphorylating), protein, A (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

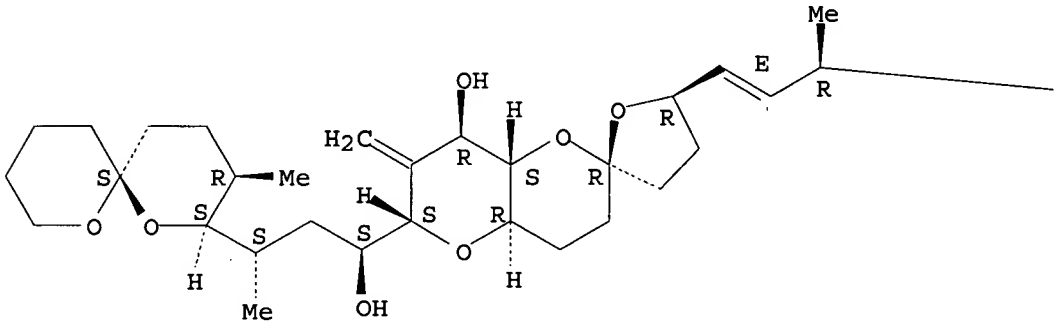
L63 ANSWER 18 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1998:226442 HCAPLUS
DOCUMENT NUMBER: 129:792
TITLE: Cell signalling and the hormonal stimulation of the hepatic glycine cleavage enzyme system by glucagon
AUTHOR(S): Mabrouk, Gehan M.; Jois, Markandeya; Brosnan, John T.
CORPORATE SOURCE: Department of Biochemistry, Memorial University of Newfoundland, St. John's, NF, A1B 3X9, Can.
SOURCE: Biochemical Journal (**1998**), 330(2), 759-763
CODEN: BIJOAK; ISSN: 0264-6021
PUBLISHER: Portland Press Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The glycine cleavage enzyme system (GCS) is found in mitochondria. In liver it is activated by glucagon and other hormones but it is not known how the hormonal signal is transmitted to the mitochondria. The authors found that the cell-permeant protein phosphatase inhibitor okadaic acid stimulated flux through GCS and could induce a significant increase in the sensitivity of GCS and of glycogenolysis to glucagon. Half-maximal stimulation of GCS by glucagon occurred at 3.2 nM, whereas it was fully activated at 0.3 nM in the presence of 1 μM okadaic acid. The protein kinase A agonist adenosine-3',5'-cyclic monophosphorothioate, Sp isomer (10 μM) stimulated the GCS flux by approx. 100%. This stimulation was inhibited by the protein kinase A antagonist 8-bromoadenosine-3',5'-cyclic monophosphorothioate, Rp isomer (**Rp-8-Br-cAMPS**). Although **Rp-8-Br-cAMPS** significantly inhibited glucagon-stimulated glycogenolysis it had no effect on the glucagon-stimulated GCS flux. These results indicate that a cytoplasmic phosphorylated protein is involved in transmitting glucagon's effect to the mitochondria. However, protein kinase A does not have a necessary role in transmitting glucagon's signal. The authors also examined the role of protein kinase C because angiotensin II also stimulated flux through GCS. However, the phorbol ester PMA had no effect on either GCS or on glycogenolysis.
IT **9007-92-5**, Glucagon, biological studies **78111-17-8**, Okadaic acid
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(cell signalling and hormonal stimulation of hepatic glycine cleavage enzyme system by glucagon)

RN 9007-92-5 HCAPLUS
CN Glucagon (7CI, 8CI, 9CI) (CA INDEX NAME)

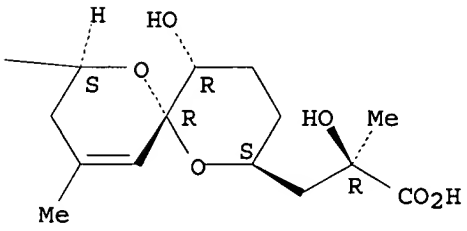
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 78111-17-8 HCAPLUS
CN 1,7-Dioxaspiro[5.5]undec-10-ene-2-propanoic acid, α,5-dihydroxy-α,10-dimethyl-8-[(1R,2E)-1-methyl-3-[(2R,4'aR,5R,6'S,8'R,8'aS)-octahydro-8'-hydroxy-6'-[(1S,3S)-1-hydroxy-3-[(2S,3R,6S)-3-methyl-1,7-dioxaspiro[5.5]undec-2-yl]butyl]-7'-methylenespiro[furan-2(3H),2'(3'H)-pyrano[3,2-b]pyran]-5-yl]-2-propenyl]-, (αR,2S,5R,6R,8S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.

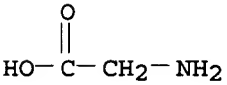
PAGE 1-A



PAGE 1-B



IT **56-40-6**, Glycine, biological studies **9005-79-2**, Glycogen, biological studies **37257-08-2**
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(cell signalling and hormonal stimulation of hepatic glycine cleavage enzyme system by glucagon)
RN 56-40-6 HCAPLUS
CN Glycine (8CI, 9CI) (CA INDEX NAME)



RN 9005-79-2 HCAPLUS

CN Glycogen (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 37257-08-2 HCAPLUS
CN Synthase, glycine (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L63 ANSWER 19 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1997:545939 HCAPLUS
DOCUMENT NUMBER: 127:232495
TITLE: Regulation of magnesium efflux from rat spleen lymphocytes
AUTHOR(S): Wolf, Federica I.; Di Francesco, Arianna; Covacci, Valeria; Cittadini, Achille
CORPORATE SOURCE: Institute of General Pathology and "Giovanni XXIII" Cancer Research Center, Universita Cattolica del Sacro Cuore, Rome, 00168, Italy
SOURCE: Archives of Biochemistry and Biophysics (**1997**), 344(2), 397-403
CODEN: ABBIA4; ISSN: 0003-9861
PUBLISHER: Academic
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Rat spleen lymphocytes (RSL) incubated at 37°C in Mg-free medium (0-trans conditions) exhibited Mg2+ efflux with apparent velocity of 0.2 nmol/mg protein/min. After 30 min, this process accounted for the mobilization of about 15% of cell total Mg2+. Half of the Mg2+ efflux depended on extracellular Na+ and was stimulated by cAMP. IFN-α significantly enhanced Mg2+ efflux under 0-trans conditions as well as in the presence of physiol. extracellular Mg2+. Pretreatment of RSL with indomethacin completely abolished IFN-α-induced Mg2+ efflux, suggesting a crucial role for cyclo-oxygenase-dependent arachidonate metabolism On the other hand, pretreatment of RSL with the PKA inhibitor (**Rp**)**8-Br-cAMPS** prevented IFN-α stimulation of Mg2+ efflux, indicating the involvement of cAMP. Consistently, both IFN-α and exogenous PGE1 increased cAMP from 50 to 125 pmol/mg protein. Altogether these results show that IFN-α stimulates Mg2+ efflux by activating arachidonate metabolism and synthesis of prostaglandins. By influencing adenyl cyclase activity, PGEs can eventually promote cAMP-dependent Mg2+ efflux, possibly through the activity of a Na-Mg antiport. In RSL, therefore, magnesium movements can be under the control of IFN-α and, perhaps, of other cytokines, suggesting the involvement of Mg2+ in cell response to receptor-mediated stimuli.
IT **7440-23-5**, Sodium, biological studies
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(regulators of magnesium efflux from rat spleen lymphocytes)
RN 7440-23-5 HCAPLUS
CN Sodium (8CI, 9CI) (CA INDEX NAME)

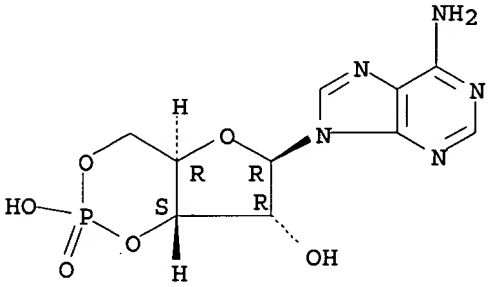
Na

IT **60-92-4**, CAMP **745-65-3**, PGE1

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(regulators of magnesium efflux from rat spleen lymphocytes)

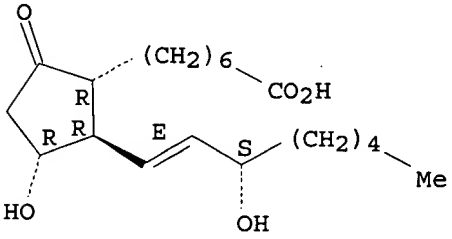
RN 60-92-4 HCAPLUS
CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 745-65-3 HCAPLUS
CN Prost-13-en-1-oic acid, 11,15-dihydroxy-9-oxo-, (11α,13E,15S)- (9CI) (CA INDEX NAME)

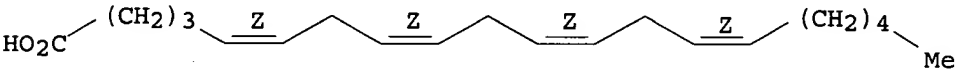
Absolute stereochemistry.
Double bond geometry as shown.



IT **506-32-1 7439-95-4**, Magnesium, biological studies
39391-18-9, Cyclo-oxygenase **142008-29-5**, Protein kinase A
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(regulators of magnesium efflux from rat spleen lymphocytes)

RN 506-32-1 HCAPLUS
CN 5,8,11,14-Eicosatetraenoic acid, (5Z,8Z,11Z,14Z)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



RN 7439-95-4 HCAPLUS
CN Magnesium (8CI, 9CI) (CA INDEX NAME)

Mg

RN 39391-18-9 HCAPLUS
CN Synthetase, prostaglandin endoperoxide (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 142008-29-5 HCAPLUS
CN Kinase (phosphorylating), protein, A (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **7439-95-4**, Magnesium, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(transport; regulators of magnesium efflux from rat spleen lymphocytes)
RN 7439-95-4 HCAPLUS
CN Magnesium (8CI, 9CI) (CA INDEX NAME)

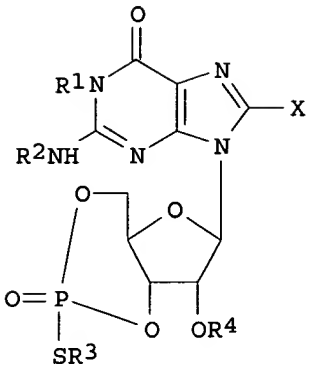
Mg

REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L63 ANSWER 20 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1997:344791 HCAPLUS
DOCUMENT NUMBER: 126:343811
TITLE: Preparation of cyclic guanosine-3',5'-monophosphorothioates as inhibitors and stimulators of cyclic GMP-dependent protein kinase
INVENTOR(S): Genieser, Hans-gottfried; Walter, Ulrich; Butt, Elke
PATENT ASSIGNEE(S): Biolog Life Science Institute, Germany
SOURCE: U.S., 8 pp., Cont.-in-part of U.S. Ser. No. 430,164, abandoned.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE	
US 5625056	A	19970429	US 1995-511664		19950807	<--
DE 4217679	A1	19931202	DE 1992-4217679		19920526	<--
DE 4217679	C2	19980219				
PRIORITY APPLN. INFO.:			DE 1992-4217679	A	19920526	<--
			US 1993-64555	B1	19930521	<--
			US 1995-430164	B2	19950427	<--

OTHER SOURCE(S): MARPAT 126:343811
GI



I

AB Cyclic nucleotide guanosine-3',5'-phosphorothioates I (R1 = R2 = H; R1R2 = styrylene; R3 = proton, cation; R4 = H, trialkylsilyl, acyl; X = CF3, alkylamine, thioalkyl, thioaryl) were prepared as cell membrane permeable inhibitors (Rp-isomers) and stimulators (Sp-isomers) of cyclic GMP-dependent protein kinase which are resistant against phosphodiesterase degradation and suitable as ligands for affinity chromatog. of cyclic nucleotide-dependent binding proteins. Thus, (Rp/Sp)-diasteriomers cyclic (Rp)-8-(4-chlorophenylthio)-guanosine-3',5'-monophosphorothioate was prepared and showed inhibition of cGMP-dependent protein kinase (Ki = 0.7 μM). In contrast, (Sp)-8-(4-chlorophenylthio)-guanosine-3',5'-monophosphorothioate is an activator for isolated cGMP-dependent protein kinase and cGMP-mediated phosphorylation in vivo.

IT **9026-43-1**, Protein kinase
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(cAMP-dependent types I and II and cGMP-dependent; preparation of cyclic guanosine-3',5'-monophosphorothioates as inhibitors and stimulators of cyclic GMP-dependent protein kinase)

RN 9026-43-1 HCAPLUS

CN Kinase (phosphorylating), protein serine/threonine (9CI) (CA INDEX NAME)

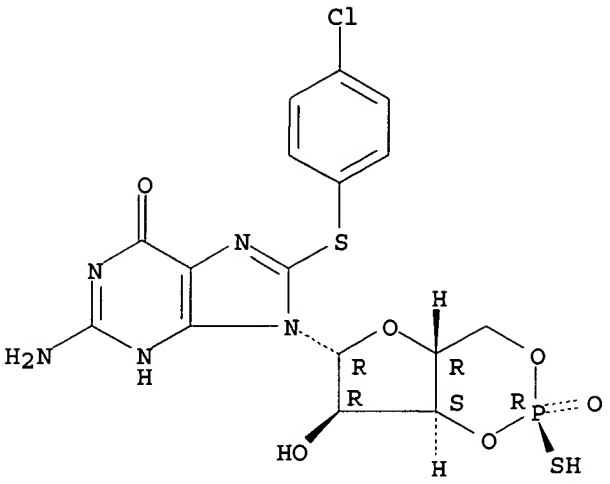
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT **153660-04-9P 160385-87-5P 172806-20-1P 189997-80-6P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of cyclic guanosine-3',5'-monophosphorothioates as inhibitors and stimulators of cyclic GMP-dependent protein kinase)

RN 153660-04-9 HCAPLUS

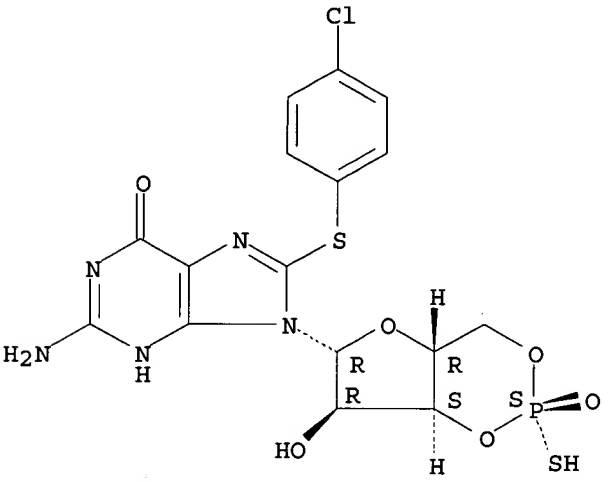
CN Guanosine, 8-[(4-chlorophenyl)thio]-, cyclic 3',5'-[hydrogen (R)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



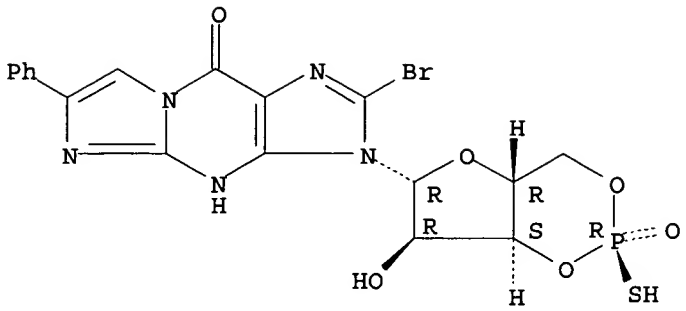
RN 160385-87-5 HCAPLUS
CN Guanosine, 8-[(4-chlorophenyl)thio]-, cyclic 3',5'-[(S)-hydrogen phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



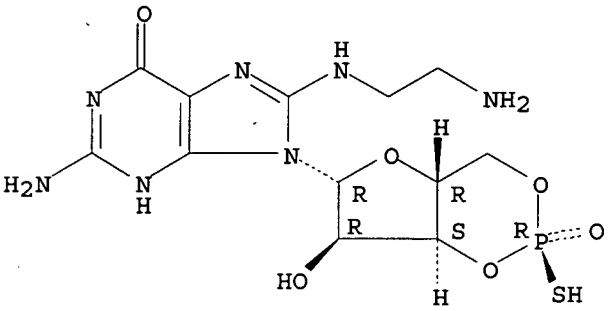
RN 172806-20-1 HCAPLUS
CN 9H-Imidazo[1,2-a]purin-9-one, 2-bromo-3,4-dihydro-3-[3,5-O-[(R)-mercaptophosphinylidene]-β-D-ribofuranosyl]-6-phenyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



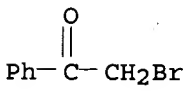
RN 189997-80-6 HCAPLUS
CN Guanosine, 8-[(2-aminoethyl)amino]-, cyclic 3',5'-[(R)-hydrogen phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.

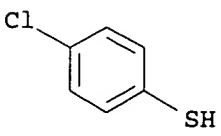


IT **70-11-1**, 2-Bromoacetophenone **106-54-7**, 4-Chlorothiophenol **129162-40-9 150418-07-8 153660-03-8 189997-75-9 189997-76-0 189997-77-1**
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of cyclic guanosine-3',5'-monophosphorothioates as inhibitors and stimulators of cyclic GMP-dependent protein kinase)

RN 70-11-1 HCAPLUS
CN Ethanone, 2-bromo-1-phenyl- (9CI) (CA INDEX NAME)

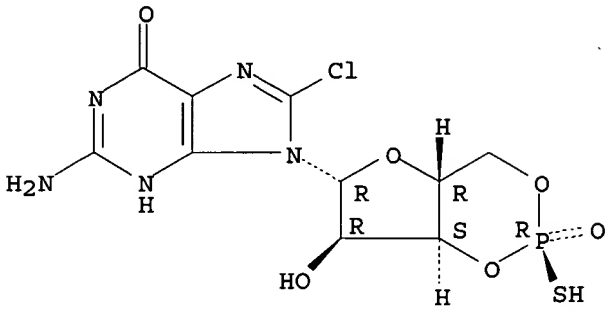


RN 106-54-7 HCAPLUS
CN Benzenethiol, 4-chloro- (9CI) (CA INDEX NAME)



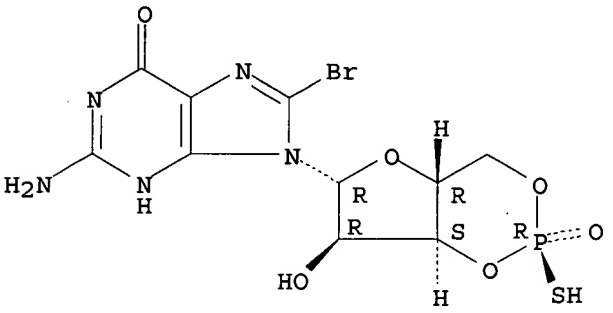
RN 129162-40-9 HCAPLUS
CN Guanosine, 8-chloro-, cyclic 3',5'-(hydrogen phosphorothioate), (R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



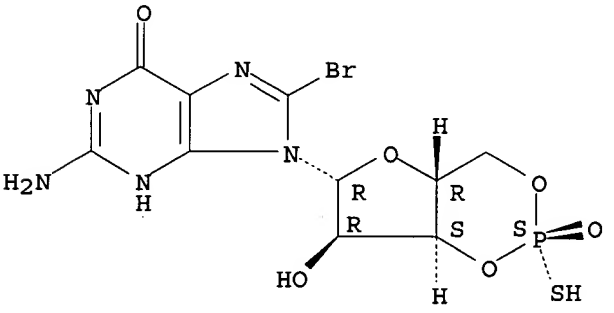
RN 150418-07-8 HCAPLUS
CN Guanosine, 8-bromo-, cyclic 3',5'-[hydrogen (R)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



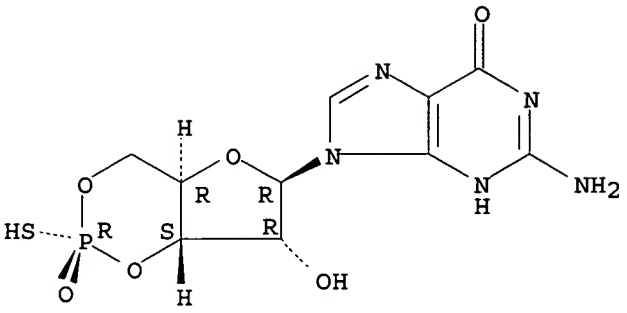
RN 153660-03-8 HCAPLUS
CN Guanosine, 8-bromo-, cyclic 3',5'-[hydrogen (S)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 189997-75-9 HCAPLUS
CN Guanosine, cyclic 3',5'-[(R)-hydrogen phosphorothioate], monoammonium salt (9CI) (CA INDEX NAME)

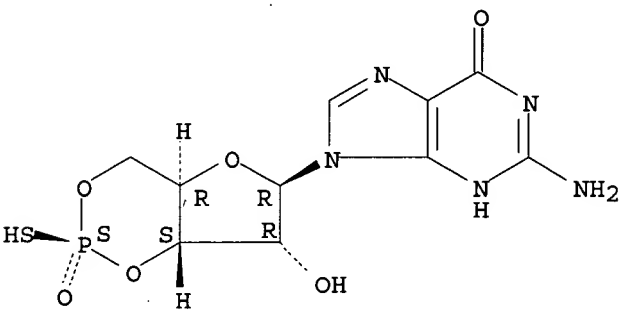
Absolute stereochemistry.



● NH_3

RN 189997-76-0 HCAPLUS
CN Guanosine, cyclic 3',5'-[(S)-hydrogen phosphorothioate], monoammonium salt (9CI) (CA INDEX NAME)

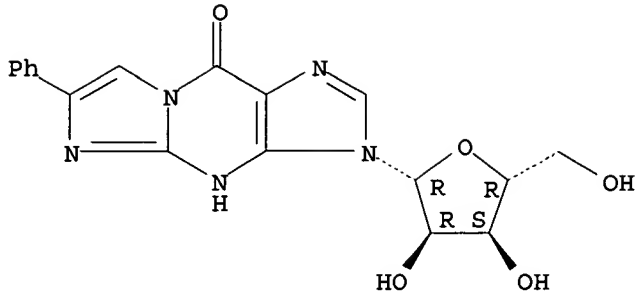
Absolute stereochemistry.



● NH_3

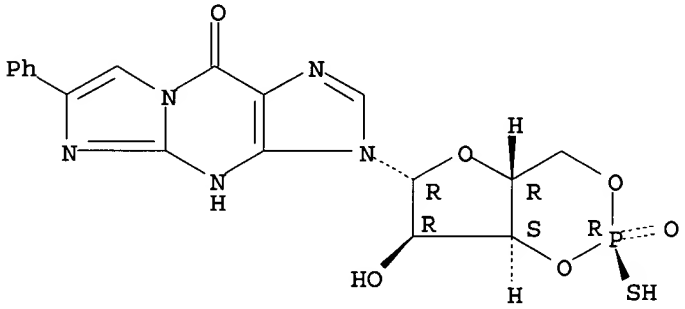
RN 189997-77-1 HCAPLUS
CN 9H-Imidazo[1,2-a]purin-9-one, 3,4-dihydro-6-phenyl-3-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



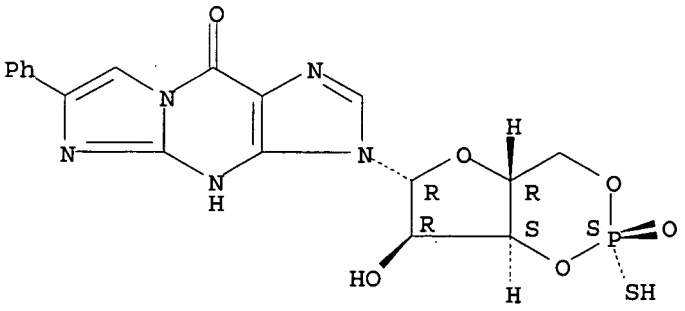
IT **153660-05-0P 189997-78-2P 189997-79-3P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of cyclic guanosine-3',5'-monophosphorothioates as inhibitors and stimulators of cyclic GMP-dependent protein kinase)
RN 153660-05-0 HCAPLUS
CN 9H-Imidazo[1,2-a]purin-9-one, 3,4-dihydro-3-[3,5-O-(mercaptophosphinylidene)-β-D-ribofuranosyl]-6-phenyl-, (R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 189997-78-2 HCAPLUS
CN 9H-Imidazo[1,2-a]purin-9-one, 3,4-dihydro-3-[3,5-O-[(S)-mercaptophosphinylidene]-β-D-ribofuranosyl]-6-phenyl- (9CI) (CA INDEX NAME)

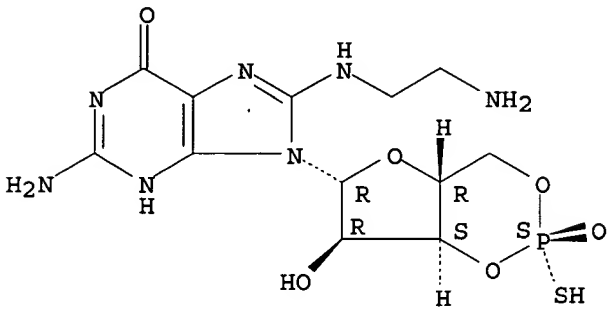
Absolute stereochemistry.



RN 189997-79-3 HCAPLUS
CN Guanosine, 8-[(2-aminoethyl)amino]-, cyclic 3',5'-[(S)-hydrogen

phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L63 ANSWER 21 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1997:305462 HCAPLUS
DOCUMENT NUMBER: 127:29348
TITLE: Glucagon-like peptide I and glucose-dependent insulinotropic polypeptide stimulate Ca2+-induced secretion in rat α-cell by a protein kinase A-mediated mechanism
AUTHOR(S): Ding, Wei-Guang; Renstrom, Erik; Rorsman, Patrik; Buschard, Karsten; Gromada, Jesper
CORPORATE SOURCE: Department of Islet Cell Physiology, Novo Nordisk A/S, Copenhagen, DK-2100, Den.
SOURCE: Diabetes (**1997**), 46(5), 792-800
CODEN: DIAEAZ; ISSN: 0012-1797
PUBLISHER: American Diabetes Association, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB High-resolution capacitance measurements were used to explore the effects of the gut hormones GLP-I(7-36) amide [glucagon-like peptide I(7-36) amide] and GIP (glucose-dependent insulinotropic polypeptide) on Ca2+-dependent exocytosis in glucagon-secreting rat pancreatic α-cells. Both peptides produced a greater than threefold potentiation of secretion evoked by voltage-clamp depolarizations, an effect that was associated with an .apprx.35% increase of the Ca2+ current. The stimulatory actions of GLP-I(7-36) amide and GIP were mimicked by forskolin and antagonized by the protein kinase A (PKA)-inhibitor **Rp-8-Br -cAMPS**. The islet hormone somatostatin inhibited the stimulatory action of GLP-I(7-36) amide and GIP via a cAMP-independent mechanism, whereas insulin had no effect on exocytosis. These data suggest that the α-cells are equipped with receptors for GLP-I and GIP and that these peptides, in addition to their well-established insulinotropic capacity, also stimulate glucagon secretion. We propose that the reported inhibitory action of GLP-I on glucagon secretion is accounted for by a paracrine mechanism (e.g., mediated by stimulated release of somatostatin that in turn suppresses exocytosis in the α-cell).

IT **7440-70-2**, Calcium, biological studies **9004-10-8**, Insulin, biological studies
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(GLP-I and glucose-dependent insulinotropic polypeptide stimulate calcium-induced glucagon secretion in pancreatic α-cells by

protein kinase A-mediated mechanism)
RN 7440-70-2 HCAPLUS
CN Calcium (8CI, 9CI) (CA INDEX NAME)

Ca

RN 9004-10-8 HCAPLUS
CN Insulin (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **51110-01-1**, Somatostatin-14 **59392-49-3**,
Glucose-dependent insulinotropic polypeptide **89750-14-1**,
Glucagon-like peptide-I **118549-37-4**, Glucagon-like peptide I(
7-36) amide
RL: BAC (Biological activity or effector, except adverse); BSU (Biological
study, unclassified); BIOL (Biological study)
(GLP-I and glucose-dependent insulinotropic polypeptide stimulate
calcium-induced glucagon secretion in pancreatic α-cells by
protein kinase A-mediated mechanism)
RN 51110-01-1 HCAPLUS
CN Somatostatin (9CI) (CA INDEX NAME)

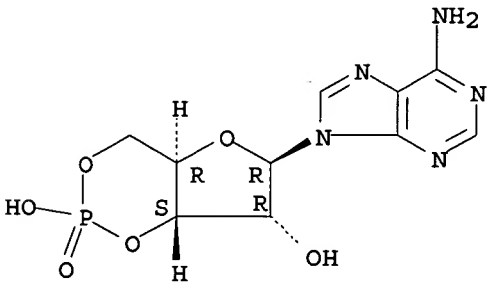
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 59392-49-3 HCAPLUS
CN Gastric inhibitory polypeptide (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 89750-14-1 HCAPLUS
CN Glucagon-like peptide I (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 118549-37-4 HCAPLUS
CN Insulinotropin (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **60-92-4**, CAMP **9007-92-5**, Glucagon, biological studies
142008-29-5, Protein kinase A
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL
(Biological study); PROC (Process)
(GLP-I and glucose-dependent insulinotropic polypeptide stimulate
calcium-induced glucagon secretion in pancreatic α-cells by
protein kinase A-mediated mechanism)
RN 60-92-4 HCAPLUS
CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 9007-92-5 HCAPLUS
CN Glucagon (7CI, 8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 142008-29-5 HCAPLUS
CN Kinase (phosphorylating), protein, A (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L63 ANSWER 22 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1997:278352 HCAPLUS
DOCUMENT NUMBER: 126:325759
TITLE: Role of cyclic nucleotides in vasopressin-induced piglet pial artery dilation and opioid release
AUTHOR(S): Rossberg, Mark I.; Armstead, William M.
CORPORATE SOURCE: Departments of Anesthesia and Pharmacology, University of Pennsylvania and The Children's Hospital of Philadelphia, Philadelphia, PA, 19104, USA
SOURCE: Pediatric Research (**1997**), 41(4, Pt. 1), 498-504
CODEN: PEREBL; ISSN: 0031-3998
PUBLISHER: Williams & Wilkins
DOCUMENT TYPE: Journal
LANGUAGE: English
AB It has previously been observed that the opioids methionine enkephalin and leucine enkephalin contribute to hypoxia-induced pial artery dilation in the piglet. It has also been demonstrated that vasopressin elicits pial artery dilation and contributes to hypoxia-induced pial dilation both directly and indirectly through the release of the above opioids. The present study was designed to investigate the role of cyclic nucleotides in this vasopressin-induced pial artery dilation and opioid release in newborn piglets equipped with a closed cranial window. Pial artery diameter and cortical periarachnoid cerebrospinal fluid (CSF) opioid and cyclic nucleotides were measured after topical application of vasopressin (40, 400, and 4000 pg/mL). Opioid levels and pial diameter were examined in the absence and presence of (Rp)-8-bromo-(Br)-cAMPs and (Rp)-8-Br-cGMPs, purported cAMP and cGMP antagonists, resp. Periarachnoid cortical CSF cAMP concentration increased in response to topical vasopressin (1048, 1199, 1334 and 1453 fmol/mL for control, 40, 400, and 4000 pg/mL vasopressin, resp.). Vasopressin elicited pial artery dilation, which was attenuated by (**Rp**)-**8-Br-cAMPs** (14, 22, and 29 vs. 8, 12, and 18% dilation for 40, 400, 4000 pg/mL vasopressin, before and after (**Rp**)-**8-Br-cAMPs**, resp.). Similarly, vasopressin-induced pial artery dilation was accompanied by elevated CSF cGMP and this dilation was attenuated in the presence of (Rp)-8-Br-cGMPs (13, 21, and 29 vs. 5, 9, and 12% dilation for 40, 400, and 4000 pg/mL vasopressin before and after (Rp)-8-Br-cGMPs, resp.). CSF opioid concns. increased with topical vasopressin and these increases were attenuated by (**Rp**)-**8-Br-cAMPs.** CSF methionine enkephalin concns. were 1193, 1530, 1937, and 2422 vs. 1032, 1185, 1337, and 1519 pg/mL for control, 40, 400 and 4000 pg/mL vasopressin before and after (**Rp**)-**8-Br-cAMPs.** Similarly, vasopressin-induced CSF methionine enkephalin and leucine enkephalin release was attenuated in the presence of (Rp)-8-Br-cGMPs. These data show that both cAMP and cGMP contribute to vasopressin-induced pial artery dilation and the release of the opioids

methionine enkephalin and leucine enkephalin.

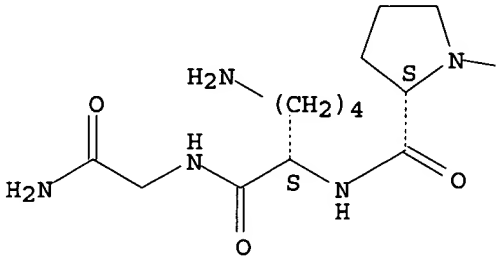
IT **50-57-7**, Lysine vasopressin
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(role of cyclic nucleotides in vasopressin-induced piglet pial artery dilation and opioid release)

RN 50-57-7 HCAPLUS

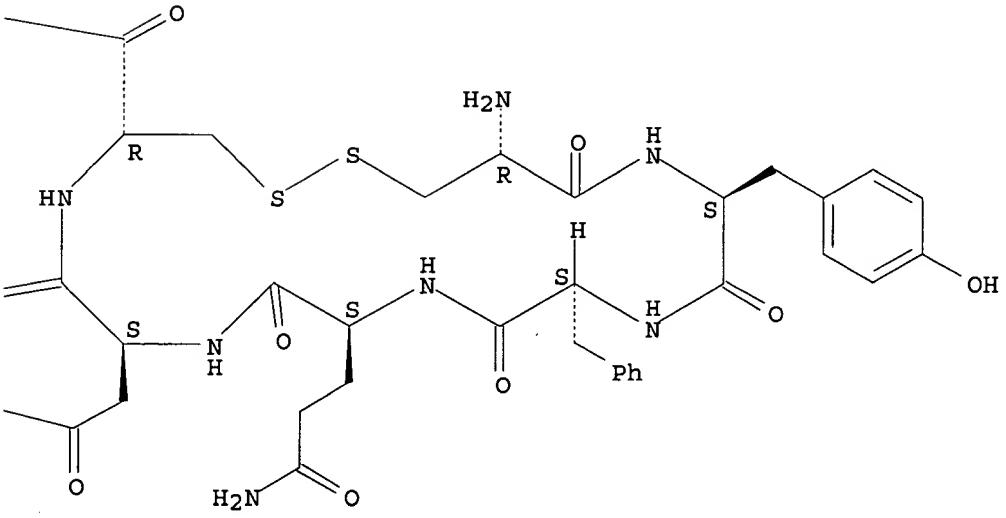
CN Vasopressin, 8-L-lysine- (7CI, 8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

PAGE 1-A



PAGE 1-B

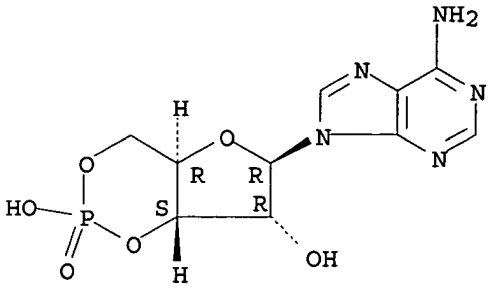


IT **60-92-4**, CAMP **7665-99-8**, CGMP **58569-55-4**, Methionine-enkephalin **58822-25-6**, Leucine-enkephalin

RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(role of cyclic nucleotides in vasopressin-induced piglet pial artery dilation and opioid release)

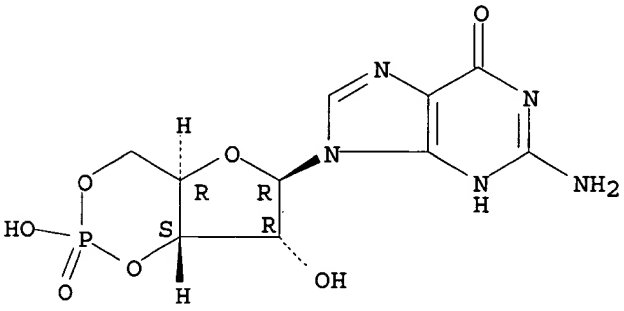
RN 60-92-4 HCAPLUS
CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 7665-99-8 HCAPLUS
CN Guanosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

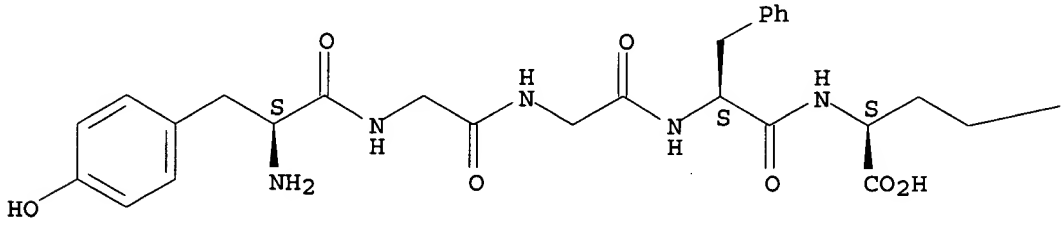
Absolute stereochemistry.



RN 58569-55-4 HCAPLUS
CN 1-5-Adrenorphin (human) (9CI) (CA INDEX NAME)

Absolute stereochemistry.

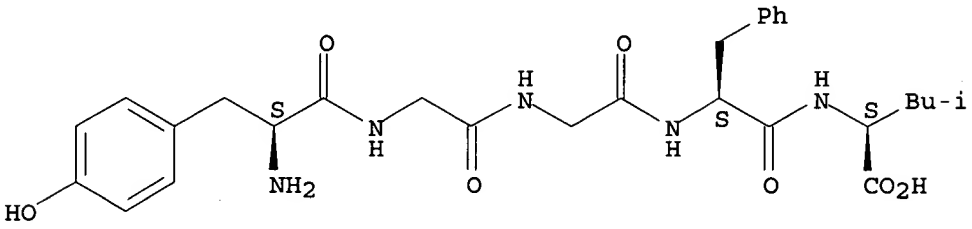
PAGE 1-A



—SMe

RN 58822-25-6 HCAPLUS
CN 1-5-β-Neoendorphin (human) (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



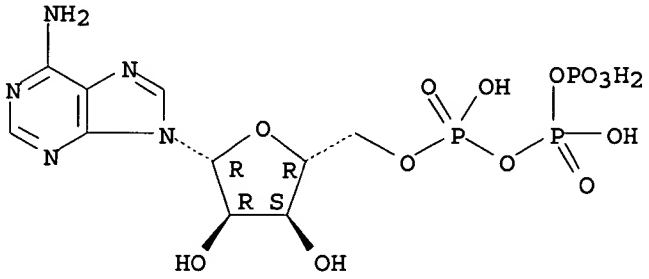
L63 ANSWER 23 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1997:259982 HCAPLUS
DOCUMENT NUMBER: 126:328599
TITLE: Extracellular ATP triggers cyclic AMP-dependent differentiation of HL-60 cells
AUTHOR(S): Jiang, Lele; Foster, Fiona M.; Ward, Peter; Tasevski, Vitomir; Luttrell, Brian M.; Conigrave, Arthur D.
CORPORATE SOURCE: Dep. Biochem., Univ. Sydney, New South Wales, 2006, Australia
SOURCE: Biochemical and Biophysical Research Communications (**1997**), 232(3), 626-630
CODEN: BBRCA9; ISSN: 0006-291X
PUBLISHER: Academic
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Extracellular ATP and ATPγS (1-1000 μM) stimulated cAMP production in undifferentiated HL-60 cells. The potency order for adenine nucleotides and adenosine was ATPγS > ATP » ADP > AMP = adenosine. Indomethacin (50 μM) had no effect on ATP-induced cAMP production ATP and ATPγS also suppressed cell growth and induced differentiation as revealed by fMLP-stimulated β-glucuronidase release 48 h after exposure. The potency order for the induction of fMLP-stimulated β-glucuronidase release by adenine nucleotides and adenosine was ATPγS > ATP > ADP > AMP = adenosine ≈ 0. The protein kinase A inhibitor **Rp-8-Br-cAMPS** (10-200 mM) suppressed ATP-induced differentiation but had no effect on ATP-dependent growth suppression. UTP which, like ATP, activates P2U receptors on HL-60 cells, had no effect on cAMP production, cell growth, or differentiation. The data suggest the existence of a novel receptor for ATP on undifferentiated HL-60 cells that is coupled to the activation of adenylate cyclase and cAMP-dependent differentiation.

IT **56-65-5**, 5'-ATP, biological studies **58-61-7**, Adenosine, biological studies **58-64-0**, 5'-ADP, biological studies **61-19-8**, 5'-AMP, biological studies **35094-46-3**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)

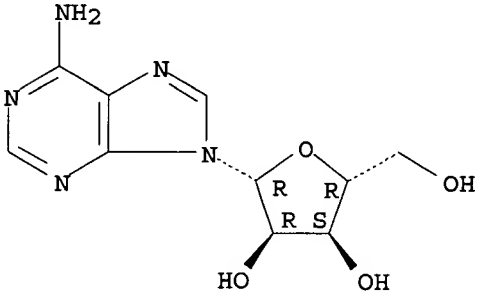
(ATP triggers cAMP-dependent differentiation of HL-60 cells)
RN 56-65-5 HCAPLUS
CN Adenosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



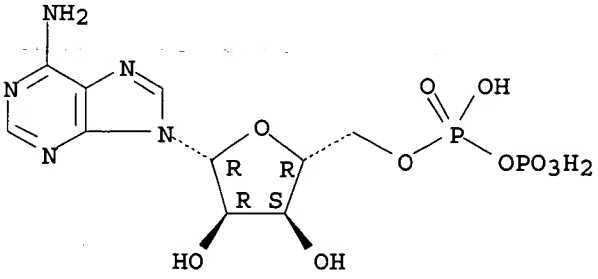
RN 58-61-7 HCAPLUS
CN Adenosine (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



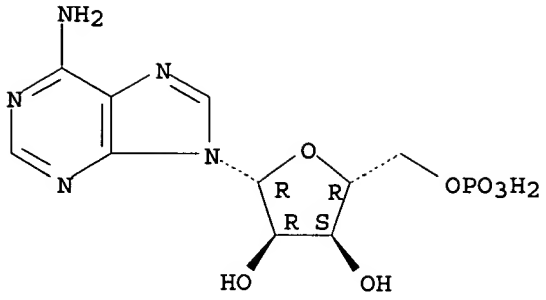
RN 58-64-0 HCAPLUS
CN Adenosine 5'-(trihydrogen diphosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



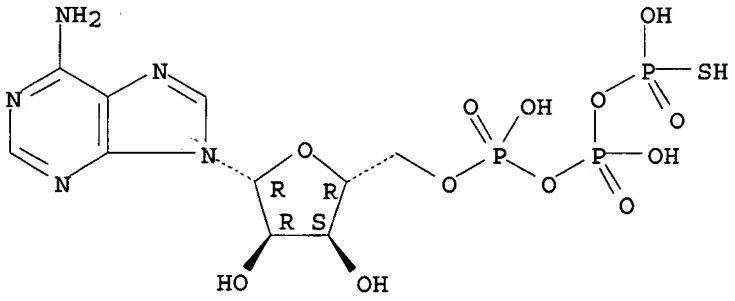
RN 61-19-8 HCAPLUS
CN 5'-Adenylic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



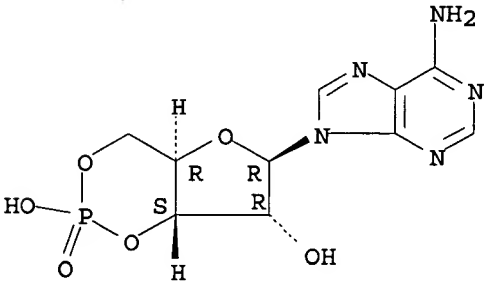
RN 35094-46-3 HCAPLUS
CN Adenosine 5'-(trihydrogen diphosphate), P'-anhydride with phosphorothioic acid (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **60-92-4**, Cyclic AMP
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative)
(ATP triggers cAMP-dependent differentiation of HL-60 cells)
RN 60-92-4 HCAPLUS
CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **9012-42-4**, Adenylate cyclase **142008-29-5**, Protein kinase A
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(ATP triggers cAMP-dependent differentiation of HL-60 cells)

RN 9012-42-4 HCAPLUS
CN Cyclase, adenylate (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 142008-29-5 HCAPLUS
CN Kinase (phosphorylating), protein, A (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L63 ANSWER 24 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1997:216913 HCAPLUS
DOCUMENT NUMBER: 126:288345
TITLE: Protein kinase A-dependent stimulation of exocytosis in mouse pancreatic β-cells by glucose-dependent insulinotropic polypeptide
AUTHOR(S): Ding, Wei-Guang; Gromada, Jesper
CORPORATE SOURCE: Department of Islet Cell Physiology, Novo Nordisk A/S, Copenhagen, DK-2100, Den.
SOURCE: Diabetes (**1997**), 46(4), 615-621
CODEN: DIAEAZ; ISSN: 0012-1797
PUBLISHER: American Diabetes Association, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The mechanisms by which glucose-dependent insulinotropic polypeptide (GIP) stimulates insulin secretion were investigated by measurements of whole-cell Ca2+ currents, the cytoplasmic Ca2+ concentration, and cell capacitance as an indicator of exocytosis in individual mouse pancreatic β-cells maintained in short-term culture. GIP produced a 4.2-fold potentiation of depolarization-induced exocytosis. This stimulation of exocytosis was not associated with a change in the whole-cell Ca2+-current, and there was only a small increase (30%) in the cytoplasmic Ca2+ concentration [intercellular free Ca2+([Ca2+]i)]. The stimulatory effect of GIP on exocytosis was blocked by pretreatment with the specific protein kinase A (PKA) inhibitor **Rp-8-Br-cAMPS.**
Glucagon-like peptide-I(7-36) amide (GLP-I) stimulated exocytosis (90%) in the presence of a maximal GIP concentration (100 nM). Replacement of GLP-I with
forskolin produced a similar stimulatory action on exocytosis. These effects of GLP-I and forskolin in the presence of GIP did not involve a change in the whole-cell Ca2+-current or [Ca2+]i. GIP was ineffective in the presence of both forskolin and the phosphodiesterase inhibitor isobutylmethylxanthine (IBMX). Under the same exptl. conditions, the protein kinase C (PKC)-activating phorbol ester 4-phorbol 12-myristate 13-acetate (PMA) stimulated exocytosis (60%). Apparently, the insulinotropic hormone GIP stimulates insulin secretion from pancreatic β-cells, through the cAMP/PKA signaling pathway, by interacting with the secretory machinery at a level distal to an elevation in [Ca2+]i.
IT **118549-37-4**, Glucagon-like peptide-I(7-36) amide
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(effect on protein kinase A-dependent stimulation of exocytosis in mouse pancreatic β-cells by glucose-dependent insulinotropic polypeptide)
RN 118549-37-4 HCAPLUS
CN Insulinotropin (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **142008-29-5**, Protein kinase A

RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(protein kinase A-dependent stimulation of exocytosis in mouse pancreatic β-cells by glucose-dependent insulinotropic polypeptide)

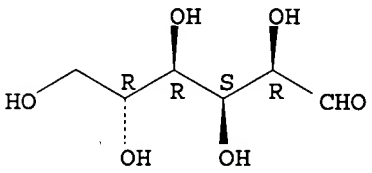
RN 142008-29-5 HCAPLUS
CN Kinase (phosphorylating), protein, A (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT **50-99-7**, Glucose, biological studies **60-92-4**, CAMP
59392-49-3, Gastric inhibitory polypeptide
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(protein kinase A-dependent stimulation of exocytosis in mouse pancreatic β-cells by glucose-dependent insulinotropic polypeptide)

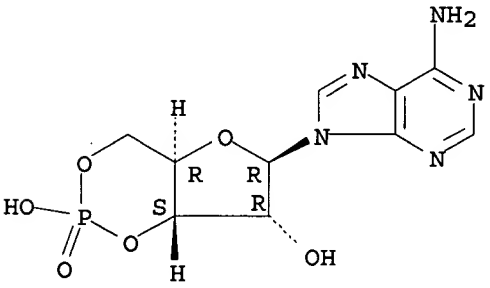
RN 50-99-7 HCAPLUS
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 60-92-4 HCAPLUS
CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 59392-49-3 HCAPLUS
CN Gastric inhibitory polypeptide (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT **7440-70-2**, Calcium, biological studies **9004-10-8**, Insulin, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(protein kinase A-dependent stimulation of exocytosis in mouse pancreatic β-cells by glucose-dependent insulinotropic polypeptide)

RN 7440-70-2 HCAPLUS
CN Calcium (8CI, 9CI) (CA INDEX NAME)

Ca

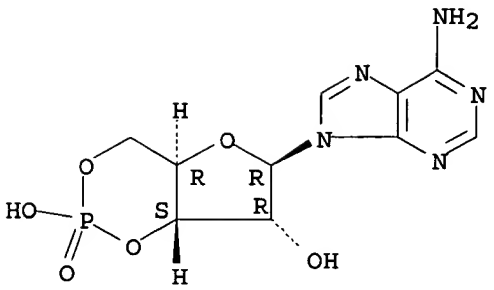
RN 9004-10-8 HCAPLUS
CN Insulin (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **141436-78-4**, Protein kinase C
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(stimulation of exocytosis in mouse pancreatic β-cells)
RN 141436-78-4 HCAPLUS
CN Kinase (phosphorylating), protein, cPKC (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L63 ANSWER 25 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1997:188635 HCAPLUS
DOCUMENT NUMBER: 126:263120
TITLE: Fas/APO-1(CD95)-induced apoptosis of primary hepatocytes is inhibited by cAMP
AUTHOR(S): Fladmark, Kari E.; Gjertsen, Bjoern T.; Doeskeland, Stein O.; Vintermyr, Olav K.
CORPORATE SOURCE: Department of Anatomy and Cell Biology, University of Bergen, Bergen, N-5009, Norway
SOURCE: Biochemical and Biophysical Research Communications (**1997**), 232(1), 20-25
CODEN: BBRCA9; ISSN: 0006-291X
PUBLISHER: Academic
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Fas/APO-1(CD-95) activation induced rapid apoptotic cell death of primary rat hepatocytes in suspension culture. Activators of cAMP-dependent protein kinase (glucagon and N6-benzoyl-cAMP) protected against apoptosis, whereas the specific cAMP-kinase inhibitor (**Rp**)-**8-Br-cAMPS** enhanced Fas-induced death. The latter observation indicated that even the basal cAMP level may provide partial protection against Fas-induced hepatocyte apoptosis. Two-dimensional gel electrophoresis revealed decreased phosphorylation of several proteins in Fas-activated cells. Most of these dephosphorylations were attenuated or not observed in cells simultaneously stimulated by anti-Fas and cAMP, indicating a tight correlation between the dephosphorylations and death. Elevation of cAMP rescued the cells not only from the Fas-induced morphol. changes and dephosphorylation, but also from functional deterioration. Whereas cells treated with anti-Fas alone quickly lost plating efficiency, hepatocytes co-treated with glucagon retained their ability to adhere and spread on a collagen substratum.
IT **60-92-4**, CAMP
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(cAMP inhibition of Fas-induced apoptosis of hepatocytes is mediated via activation of cAMP-dependent kinase)
RN 60-92-4 HCAPLUS
CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **142008-29-5**, CAMP-dependent protein kinase
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(cAMP inhibition of Fas-induced apoptosis of hepatocytes is mediated via activation of cAMP-dependent kinase)
RN 142008-29-5 HCAPLUS
CN Kinase (phosphorylating), protein, A (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

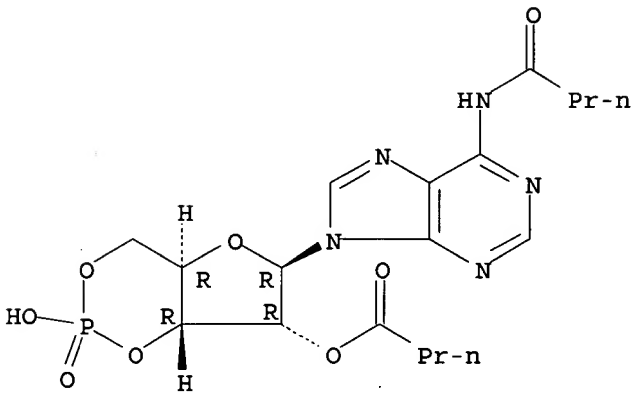
L63 ANSWER 26 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1996:596376 HCAPLUS
DOCUMENT NUMBER: 125:265365
TITLE: Interactions between cAMP- and cGMP-dependent protein kinase inhibitors and phosphodiesterase IV inhibitors on arachidonate release from human monocytes
AUTHOR(S): Hichami, A.; Boichot, E.; Germain, N.; Coqueret, O.; Lagente, V.
CORPORATE SOURCE: Fac. Sci. Pharmaceutiques Biologiques, Univ. Rennes, Rennes, Fr.
SOURCE: Life Sciences (**1996**), 59(16), PL255-PL261
CODEN: LIFSAK; ISSN: 0024-3205
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The effects of specific inhibitors of cAMP-dependent protein kinase (PKA) and cGMP-dependent protein kinase (PKG) on the inhibitory activity of phosphodiesterase (PDE) type IV inhibitors and of the cell permeable analog of cAMP, db-cAMP, were investigated on fMLP-induced arachidonate release from human monocytes. When monocytes were preincubated with the combined PKA/PKG inhibitor H8 (10-6 to 10-4 M) or the selective PKG inhibitor Rp-8-cpt-cGMPs (10-6 to 10-4 M) a concentration-dependent reduction of the inhibitory effect of db-cAMP (10-3 M), rolipram (10-5 M) and Ro 20-1724 (10-5 M) was noted. When monocytes were preincubated with the selective PKA inhibitor H89 (10-6 to 10-4 M), only a small inhibition of the effect of db-cAMP and no inhibition of the effects of rolipram and Ro 20-1724 were observed The present data indicate that db-cAMP and PDE IV inhibitors elicit an in vitro anti-inflammatory activity by a PKA-independent mechanism, which do not appear to be mainly mediated via the PKG activation.
IT **362-74-3**, Dibutyryl-cAMP **29925-17-5**, Ro 20-1724 **61413-54-5**, Rolipram **84478-11-5**, H8 **127243-85-0**, H89 **153660-04-9**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(interactions between cAMP- and cGMP-dependent protein kinase inhibitors and phosphodiesterase IV inhibitors on arachidonate release

from human monocytes)

RN 362-74-3 HCAPLUS

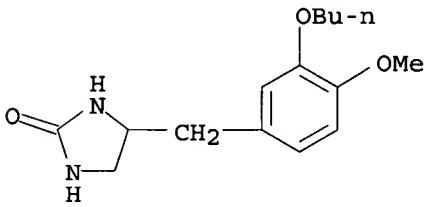
CN Adenosine, N-(1-oxobutyl)-, cyclic 3',5'-(hydrogen phosphate) 2'-butanoate (9CI) (CA INDEX NAME)

Absolute stereochemistry.



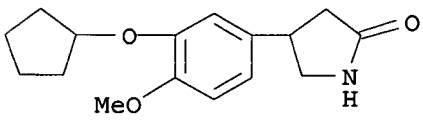
RN 29925-17-5 HCAPLUS

CN 2-Imidazolidinone, 4-[(3-butoxy-4-methoxyphenyl)methyl]- (9CI) (CA INDEX NAME)



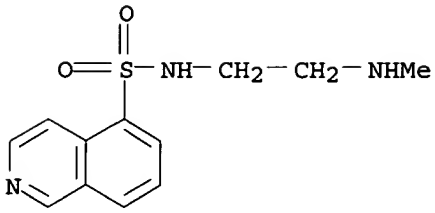
RN 61413-54-5 HCAPLUS

CN 2-Pyrrolidinone, 4-[3-(cyclopentyloxy)-4-methoxyphenyl]- (9CI) (CA INDEX NAME)



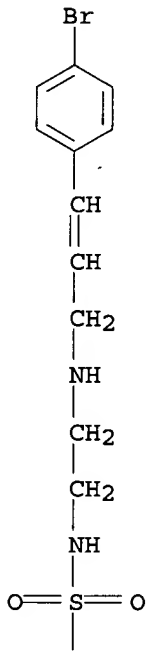
RN 84478-11-5 HCAPLUS

CN 5-Isoquinolinesulfonamide, N-[2-(methylamino)ethyl]- (9CI) (CA INDEX NAME)

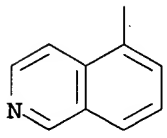


RN 127243-85-0 HCAPLUS
CN 5-Isoquinolinesulfonamide, N-[2-[[3-(4-bromophenyl)-2-propenyl]amino]ethyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

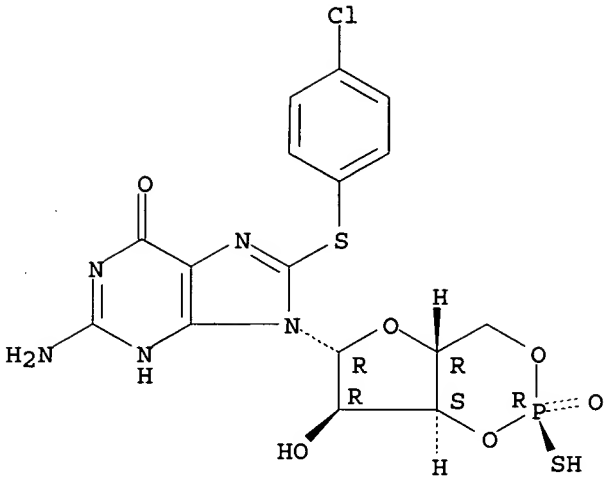


PAGE 2-A



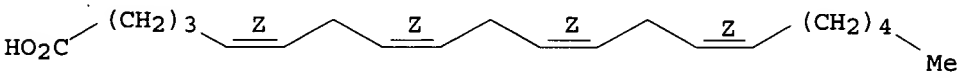
RN 153660-04-9 HCAPLUS
CN Guanosine, 8-[(4-chlorophenyl)thio]-, cyclic 3',5'-[hydrogen (R)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **506-32-1**, Arachidonic acid
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(interactions between cAMP- and cGMP-dependent protein kinase inhibitors and phosphodiesterase IV inhibitors on arachidonate release from human monocytes)
RN 506-32-1 HCAPLUS
CN 5,8,11,14-Eicosatetraenoic acid, (5Z,8Z,11Z,14Z)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



IT **9036-21-9**, Phosphodiesterase IV **141588-27-4**
142008-29-5, CAMP-dependent protein kinase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(interactions between cAMP- and cGMP-dependent protein kinase inhibitors and phosphodiesterase IV inhibitors on arachidonate release from human monocytes)
RN 9036-21-9 HCAPLUS
CN Phosphodiesterase, adenosine cyclic 3',5'-phosphate (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 141588-27-4 HCAPLUS
CN Kinase (phosphorylating), protein, G (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 142008-29-5 HCAPLUS
CN Kinase (phosphorylating), protein, A (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L63 ANSWER 27 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1996:594936 HCAPLUS
DOCUMENT NUMBER: 125:323544
TITLE: Effects of activation and inhibition of cAMP-dependent protein kinase on long-term habituation in the crab Chasmagnathus

AUTHOR(S): Romano, Arturo; Locatelli, Fernando; Delorenzi, Alejandro; Pedreira, Maria E.; Maldonado, Hector
CORPORATE SOURCE: Laboratorio de Neurobiologia de la Memoria, Facultad de Ciencias Exactas y Naturales. Departamento de Ciencias Biologicas, Pab 2. University of Buenos Aires, Buenos Aires, 1428, Argent.
SOURCE: Brain Research (**1996**), 735(1), 131-140
CODEN: BRREAP; ISSN: 0006-8993
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English

AB On sudden presentation of a danger stimulus, the crab Chasmagnathus elicits an escape response that habituates promptly and for a long period. The authors have previously reported that administration of a cAMP-permeable analog (CPT-cAMP) along with a phosphodiesterase inhibitor (IBMX) improves long-term habituation (LTH). In present expts. the authors studied the effect of systemic administration of the protein kinase A (PKA) activator Sp-5,6-DCl-cBIMPS and that of the PKA inhibitor **Rp-8-Cl-cAMPS** on LTH tested 24 h after a weak training protocol (5 trials of danger stimulus presentation) or a strong training protocol (15-30 trials), resp. A 50 μl pre-training injection of 75 μM Sp-5,6-DCl-cBIMPS, and to a lesser degree of 25 μM, improved retention of the habituated response but not affect short-term habituation (STH). Like pre-training injection, post-training administration of Sp-5,6-DCl-cBIMPS proved to exert a facilitatory action on retention though with 75 μM dose only. Conversely, both pre- and post-training injection of 25 μM **Rp-8-Cl-cAMPS** impaired LTH without affecting STH. Thus, the PKA activator Sp-5,6-DCl-cBIMPS enables a weak training to produce LTH while the PKA inhibitor **Rp-8-Cl-cAMPS** impairs LTH when a strong training is given. Activation of crab PKA by Sp-5,6-DCl-cBIMPS and its inhibition by **Rp-8-Cl-cAMPS** were assessed using an in vitro PKA activity assay. These results provide independent evidences supporting the view that PKA plays a key role in long-term memory storage in this learning paradigm.

IT **142008-29-5**, Protein kinase A
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(activation and inhibition of cAMP-dependent protein kinase effect on long-term habituation in crab Chasmagnathus)

RN 142008-29-5 HCAPLUS
CN Kinase (phosphorylating), protein, A (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L63 ANSWER 28 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1996:456795 HCAPLUS
DOCUMENT NUMBER: 125:158357
TITLE: Apoptosis induced in neuronal cultures by either the phosphatase inhibitor okadaic acid or the kinase inhibitor staurosporine is attenuated by isoquinolinesulfonamides H-7, H-8, and H-9
AUTHOR(S): Cagnoli, Cinzia M.; Kharlamov, Elena; Atabay, Cagla; Uz, Tolga; Manev, Hari
CORPORATE SOURCE: Allegheny-Singer Res. Inst., Med. Coll. Pennsylvania/Hahnemann Univ., Pittsburgh, PA, USA
SOURCE: Journal of Molecular Neuroscience (**1996**), 7(1), 65-76
CODEN: JMNEES; ISSN: 0895-8696

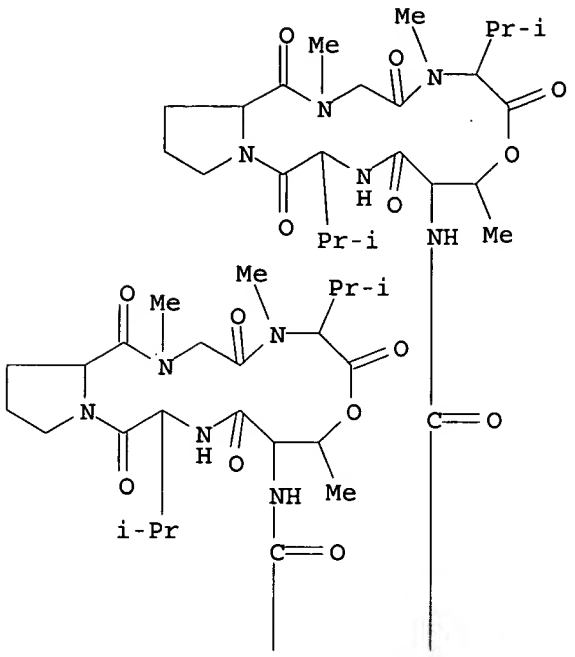
PUBLISHER: Humana
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Protein phosphorylation is kept in balance by an orchestrated action of kinases and phosphatases; when this balance is lost, neuronal apoptosis may occur. Okadaic acid (OKA), a marine toxin that inhibits specifically protein phosphatases 1 and 2A (EC 3.1.3.16), and staurosporine, an inhibitor of protein kinase C (PKC; EC 2.7.1.37), induced apoptosis in primary cultures of rat cerebellar granule neurons. We assayed apoptosis by the DNA gel electrophoresis, by the in situ TUNEL assay, and by morphol. appearance following propidium iodide staining. Cell viability was assessed by the Trypan blue assay. Both OKA- and staurosporine-induced neuronal apoptosis were prevented by a macromol. synthesis inhibitor actinomycin D and by a group of isoquinolinesulfonamide kinase inhibitors (H-7, 1-[5-isoquinolinesulfonyl]-2-methylpiperazine; H-8, N-{2-[methylamino]ethyl}-5-isoquinolinesulfonamide; H-9, N-(2-aminoethyl)-5-isoquinolinesulfonamide), but not by inhibitors of PKC, cyclic-GMP- and cyclic-AMP-dependent kinases, calcium/calmodulin-dependent kinases, tyrosine kinases, or by antioxidants. We postulate that a common mechanism, possibly an increased protein phosphorylation, is responsible for apoptosis triggered by an inhibition of phosphatases 1 and 2A and PKC. Elucidating the isoquinolinesulfonamide-sensitive mechanism may help us find new therapies for neurodegenerative diseases that involve apoptosis.

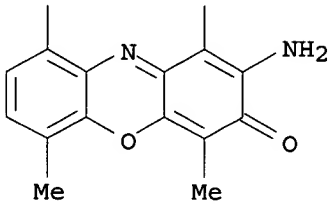
IT **50-76-0**, Actinomycin D **446-72-0**, Genistein
34316-15-9, Chelerythrine **62996-74-1**, Staurosporine
78111-17-8, Okadaic acid **84468-17-7**, H-9
84477-87-2, H-7 **84478-11-5**, H-8 **121263-19-2**,
Calphostin C **125697-92-9**, Lavendustin A **127191-97-3**,
KN-62 **127243-85-0**, H-89 **153660-04-9**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(apoptosis induced in neuronal cultures by phosphatase inhibitor okadaic acid or kinase inhibitor staurosporine is attenuated by isoquinolinesulfonamides)

RN 50-76-0 HCAPLUS
CN Actinomycin D (8CI, 9CI) (CA INDEX NAME)

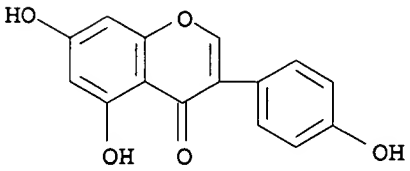
PAGE 1-A



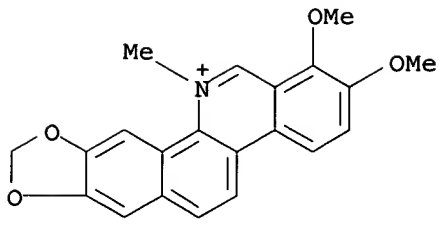
PAGE 2-A



RN 446-72-0 HCAPLUS
CN 4H-1-Benzopyran-4-one, 5,7-dihydroxy-3-(4-hydroxyphenyl)- (9CI) (CA INDEX NAME)

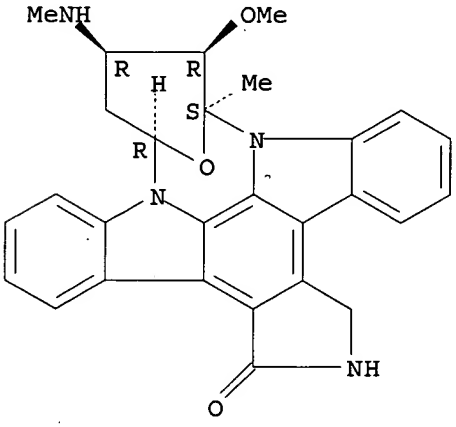


RN 34316-15-9 HCAPLUS
CN [1,3]Benzodioxolo[5,6-c]phenanthridinium, 1,2-dimethoxy-12-methyl- (9CI) (CA INDEX NAME)



RN 62996-74-1 HCAPLUS
CN 9,13-Epoxy-1H,9H-diindolo[1,2,3-gh:3',2',1'-lm]pyrrolo[3,4-j][1,7]benzodiazonin-1-one, 2,3,10,11,12,13-hexahydro-10-methoxy-9-methyl-11-(methylamino)-, (9S,10R,11R,13R)- (9CI) (CA INDEX NAME)

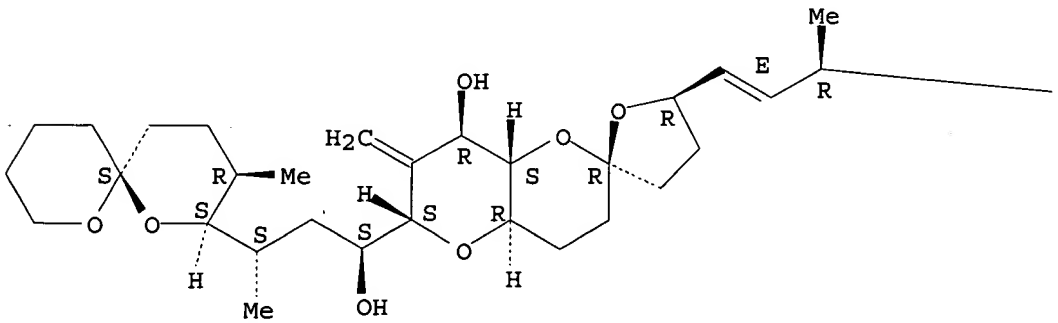
Absolute stereochemistry. Rotation (+).



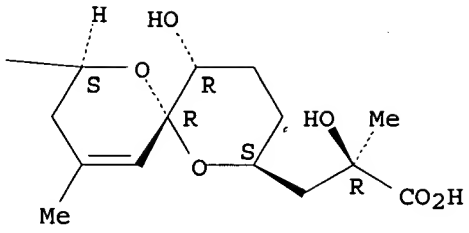
RN 78111-17-8 HCAPLUS
CN 1,7-Dioxaspiro[5.5]undec-10-ene-2-propanoic acid, α,5-dihydroxy-α,10-dimethyl-8-[(1R,2E)-1-methyl-3-[(2R,4'aR,5R,6'S,8'R,8'aS)-octahydro-8'-hydroxy-6'-[(1S,3S)-1-hydroxy-3-[(2S,3R,6S)-3-methyl-1,7-dioxaspiro[5.5]undec-2-yl]butyl]-7'-methylenespiro[furan-2(3H),2'(3'H)-pyrano[3,2-b]pyran]-5-yl]-2-propenyl]-, (αR,2S,5R,6R,8S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.

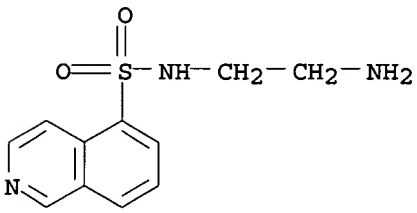
PAGE 1-A



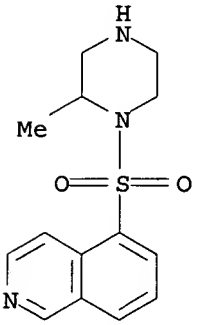
PAGE 1-B



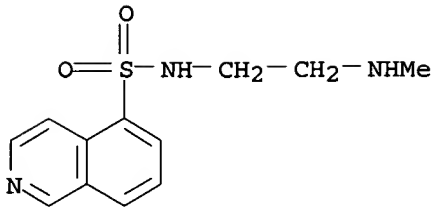
RN 84468-17-7 HCAPLUS
CN 5-Isoquinolinesulfonamide, N-(2-aminoethyl)- (9CI) (CA INDEX NAME)



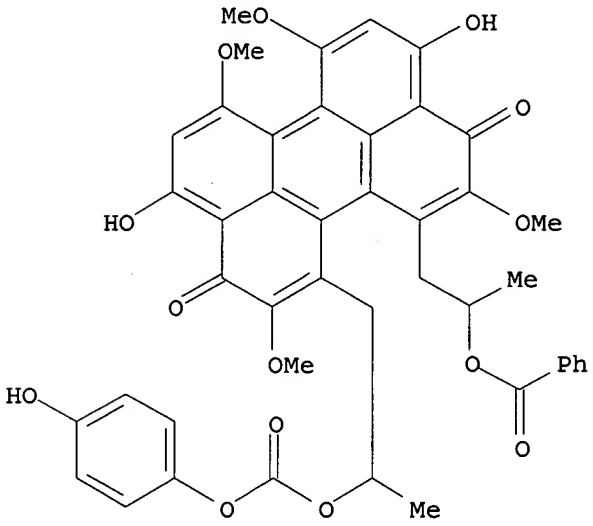
RN 84477-87-2 HCAPLUS
CN Piperazine, 1-(5-isoquinolinylsulfonyl)-2-methyl- (9CI) (CA INDEX NAME)



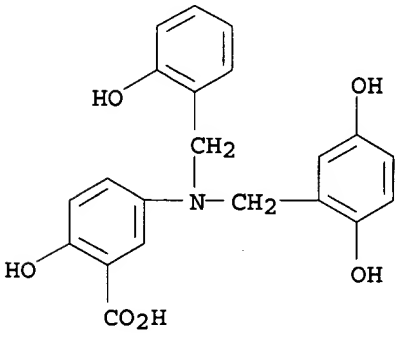
RN 84478-11-5 HCAPLUS
CN 5-Isoquinolinesulfonamide, N-[2-(methylamino)ethyl]- (9CI) (CA INDEX NAME)



RN 121263-19-2 HCAPLUS
CN Carbonic acid, (1R)-2-[12-[(2R)-2-(benzoyloxy)propyl]-3,10-dihydro-4,9-dihydroxy-2,6,7,11-tetramethoxy-3,10-dioxo-1-perylenyl]-1-methylethyl 4-hydroxyphenyl ester, stereoisomer (9CI) (CA INDEX NAME)



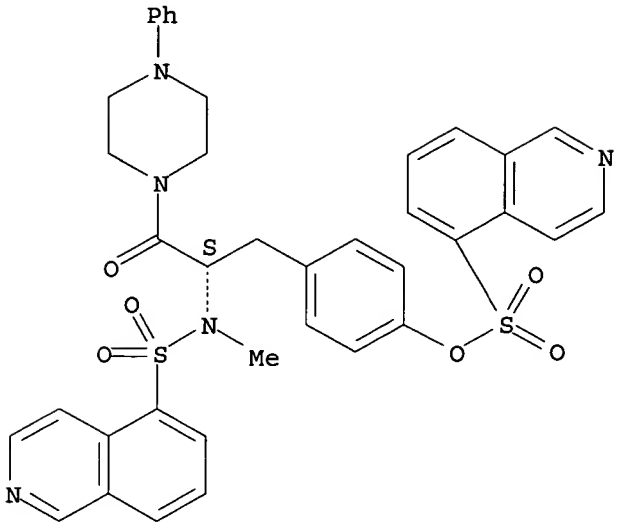
RN 125697-92-9 HCAPLUS
CN Benzoic acid, 5-[[(2,5-dihydroxyphenyl)methyl][(2-hydroxyphenyl)methyl]amino]-2-hydroxy- (9CI) (CA INDEX NAME)



RN 127191-97-3 HCAPLUS
CN 5-Isoquinolinesulfonic acid, 4-[(2S)-2-[(5-isoquinolinylsulfonyl)methylamino]-3-oxo-3-(4-phenyl-1-piperazinyl)propyl]phenyl ester (9CI) (CA INDEX

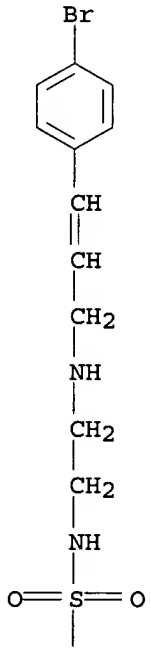
NAME)

Absolute stereochemistry.



RN 127243-85-0 HCAPLUS
CN 5-Isoquinolinesulfonamide, N-[2-[[3-(4-bromophenyl)-2-propenyl]amino]ethyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



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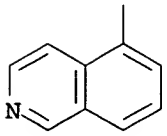
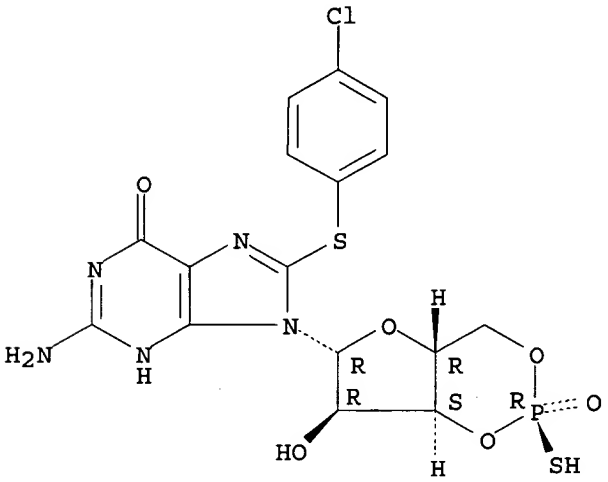


RN 153660-04-9 HCAPLUS
CN Guanosine, 8-[(4-chlorophenyl)thio]-, cyclic 3',5'-[hydrogen (R)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **9025-75-6**, Protein phosphatase **141436-78-4**, Protein kinase C
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(apoptosis induced in neuronal cultures by phosphatase inhibitor okadaic acid or kinase inhibitor staurosporine is attenuated by isoquinolinesulfonamides)
RN 9025-75-6 HCAPLUS
CN Phosphatase, protein phosphoserine/phosphothreonine (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 141436-78-4 HCAPLUS
CN Kinase (phosphorylating), protein, cPKC (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L63 ANSWER 29 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1996:113512 HCAPLUS
DOCUMENT NUMBER: 124:156073
TITLE: cAMP derivatives as synovial membrane cell proliferation inhibitors and pharmaceutical compositions containing cAMP derivatives for treatment of chronic arthrorheumatism
INVENTOR(S): Higaki, Megumi; Sakane, Takeshi; Mizushima, Yutaka; Yasumoto, Takashi; Morisawa, Yoshitomi
PATENT ASSIGNEE(S): Ltt Inst Co Ltd, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF

DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

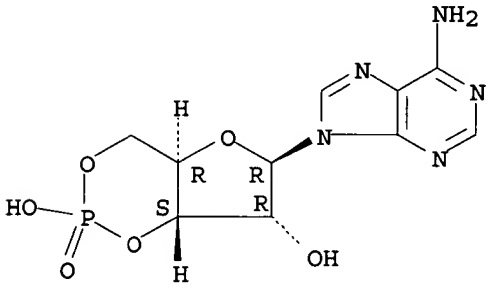
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07324035	A2	19951212	JP 1994-116194	19940530 <--
PRIORITY APPLN. INFO.:			JP 1994-116194	19940530 <--

AB CAMP derivs. as synovial membrane cell proliferation inhibitors and pharmaceutical compns. containing CAMP derivs. for treatment of chronic arthrorheumatism are claimed. The compds. markedly inhibited the proliferation of synovial membrane cells in cultures. Capsules were formulated containing 8-chloro-cAMP 5μg, lactose 148, corn starch 50, and magnesium stearate 1.5g.

IT **60-92-4D**, CAMP, derivs. **362-74-3**, N6,2'-O-Dibutyryl-cAMP **15392-98-0**, 2'-O-Monobutyryl-cAMP **23583-48-4**, 8-Bromo-cAMP **30630-07-0**, 8-Thiomethyl-cAMP **32115-08-5**, N6-Benzyl-cAMP **41941-56-4D**, 8-Chloro-cAMP, derivs. **58418-36-3 61866-09-9 61866-11-3 72549-36-1 142754-27-6 142754-28-7**
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cAMP derivs. as synovial membrane cell proliferation inhibitors and pharmaceutical compns. containing CAMP derivs. for treatment of chronic arthrorheumatism)

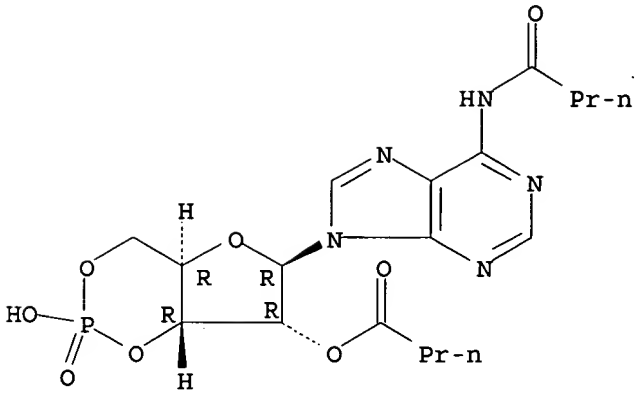
RN 60-92-4 HCAPLUS
CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



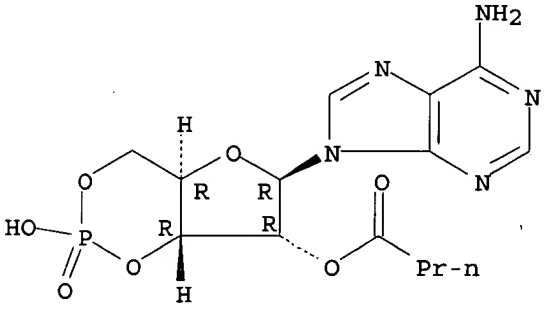
RN 362-74-3 HCAPLUS
CN Adenosine, N-(1-oxobutyl)-, cyclic 3',5'-(hydrogen phosphate) 2'-butanoate (9CI) (CA INDEX NAME)

Absolute stereochemistry.



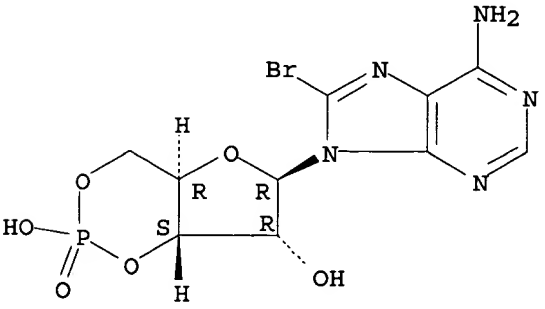
RN 15392-98-0 HCAPLUS
CN Adenosine, cyclic 3',5'-(hydrogen phosphate) 2'-butanoate (9CI) (CA INDEX NAME)

Absolute stereochemistry.



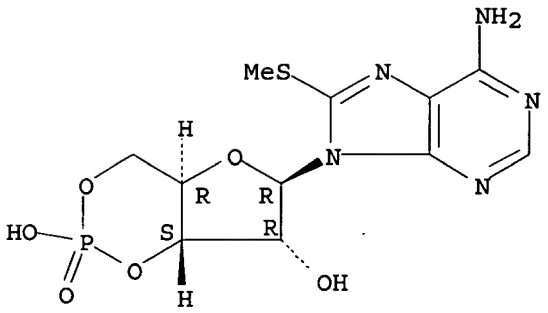
RN 23583-48-4 HCAPLUS
CN Adenosine, 8-bromo-, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



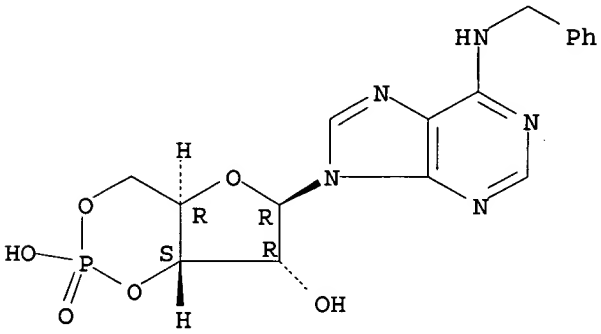
RN 30630-07-0 HCAPLUS
CN Adenosine, 8-(methylthio)-, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



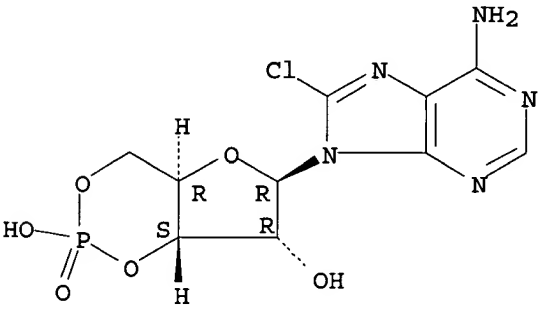
RN 32115-08-5 HCAPLUS
CN Adenosine, N-(phenylmethyl)-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



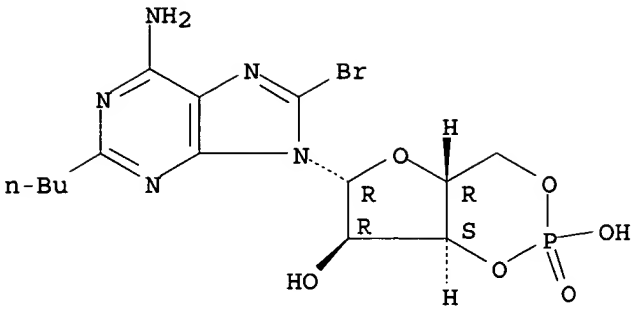
RN 41941-56-4 HCAPLUS
CN Adenosine, 8-chloro-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



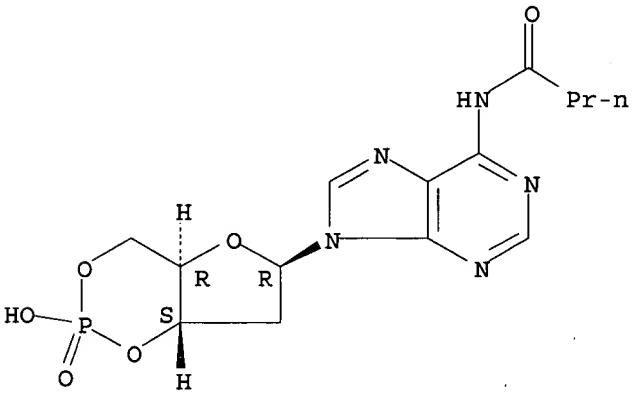
RN 58418-36-3 HCAPLUS
CN Adenosine, 8-bromo-2-butyl-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



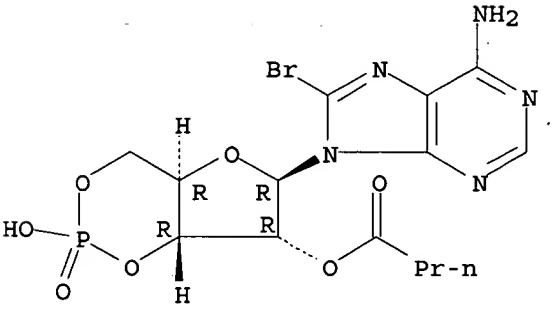
RN 61866-09-9 HCAPLUS
CN Adenosine, 2'-deoxy-N-(1-oxobutyl)-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



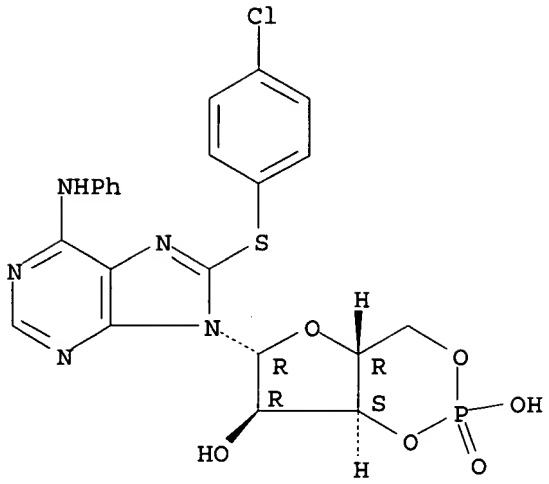
RN 61866-11-3 HCAPLUS
CN Adenosine, 8-bromo-, cyclic 3',5'-(hydrogen phosphate) 2'-butanoate (9CI) (CA INDEX NAME)

Absolute stereochemistry.



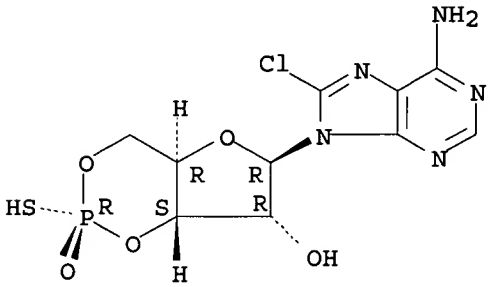
RN 72549-36-1 HCAPLUS
CN Adenosine, 8-[(4-chlorophenyl)thio]-N-phenyl-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



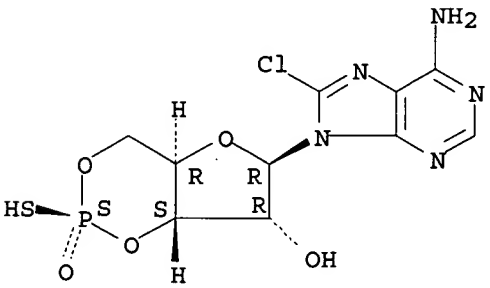
RN 142754-27-6 HCAPLUS
CN Adenosine, 8-chloro-, cyclic 3',5'-[hydrogen (R)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 142754-28-7 HCAPLUS
CN Adenosine, 8-chloro-, cyclic 3',5'-[hydrogen (S)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L63 ANSWER 30 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1996:101527 HCAPLUS
DOCUMENT NUMBER: 124:223905

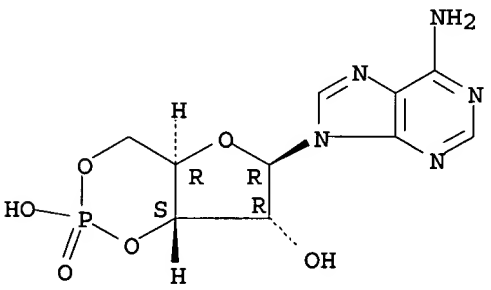
TITLE: Antagonists of cyclic nucleotide-gated channels and molecular mapping of their site of action
AUTHOR(S): Kramer, Richard H.; Tibbs, Gareth R.
CORPORATE SOURCE: Dep. Molecular Cellular Pharmacology, Univ. Miami School Medicine, Miami, FL, 33101, USA
SOURCE: Journal of Neuroscience (**1996**), 16(4), 1285-93
CODEN: JNRSDS; ISSN: 0270-6474
PUBLISHER: Society for Neuroscience
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Activation of photoreceptor and olfactory cyclic nucleotide-gated (CNG) channels involves distinct ligand-binding and channel-gating reactions. To dissociate binding from gating, the authors identified the first competitive antagonists of CNG channels: specific phosphorothioate derivs. of cAMP and cGMP. The authors also identified membrane-permeant forms of these mols. that are antagonists and that will be useful for elucidating physiol. roles for CNG channels in intact cells. The photoreceptor and olfactory CNG channels determine which of the phosphorothioate derivs. are agonists and which are antagonists based on different structural features of the ligand. The photoreceptor channel uses the nature of the purine ring (adenine vs. guanine), whereas the olfactory channel uses the isomeric position of the thiophosphate S atom (Rp vs. Sp). Interestingly, the same ligand, Rp-cGMPS, has opposite effects on the two channels, activating the photoreceptor channel and antagonizing the olfactory channel. Because Rp-cGMPS binds to both channels but activates only one, the channels must differ in a protein region that couples binding to gating. Chimeric photoreceptor and olfactory CNG channels reveal that the cytoplasmic C-terminal domain dets. whether bound ligand activates the channel successfully. Hence, the C terminus contains not only the cyclic nucleotide-binding site, but also a region that couples ligand binding to channel gating.

IT **60-92-4**, CAMP **7665-99-8**, CGMP **71774-13-5**
86562-09-6 86562-10-9 86594-34-5
129735-01-9 153660-04-9
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(cAMP and cGMP phosphorothioate derivative effects on cyclic nucleotide-gated channels of cell membrane and mol. mapping of site of action)

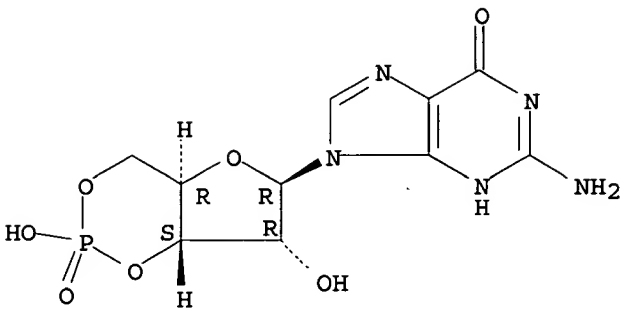
RN 60-92-4 HCAPLUS
CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



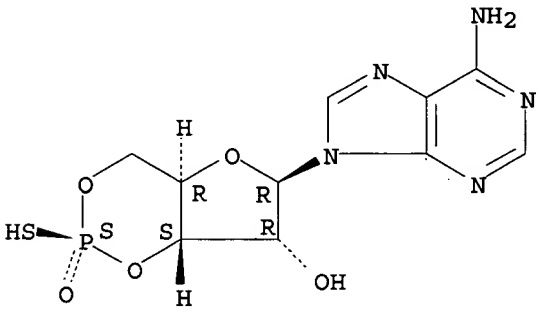
RN 7665-99-8 HCAPLUS
CN Guanosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



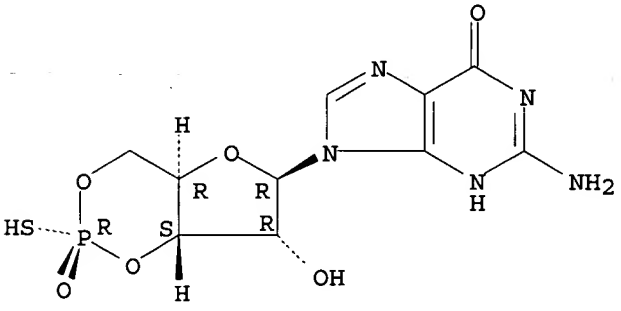
RN 71774-13-5 HCAPLUS
CN Adenosine, cyclic 3',5'-[hydrogen (S)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



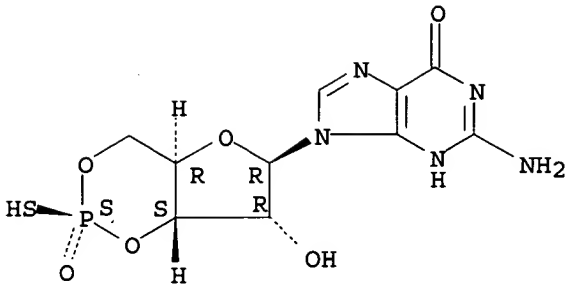
RN 86562-09-6 HCAPLUS
CN Guanosine, cyclic 3',5'-[(R)-hydrogen phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.

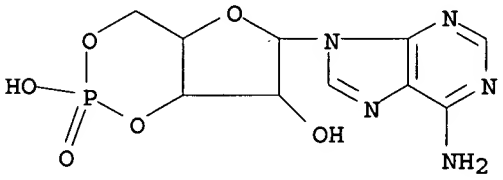


RN 86562-10-9 HCAPLUS
CN Guanosine, cyclic 3',5'-[(S)-hydrogen phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.

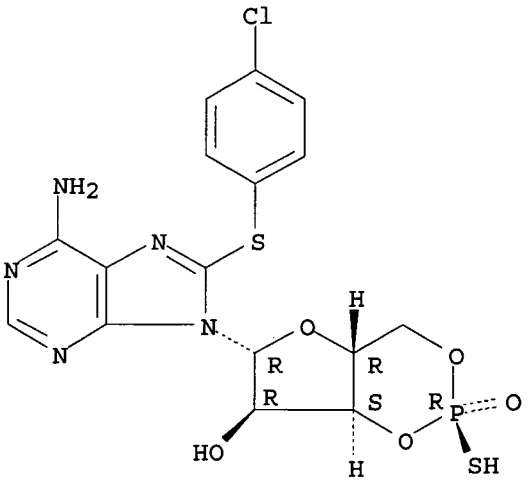


RN 86594-34-5 HCAPLUS
CN Adenosine, cyclic 3',5'-(hydrogen phosphate), (R)- (9CI) (CA INDEX NAME)



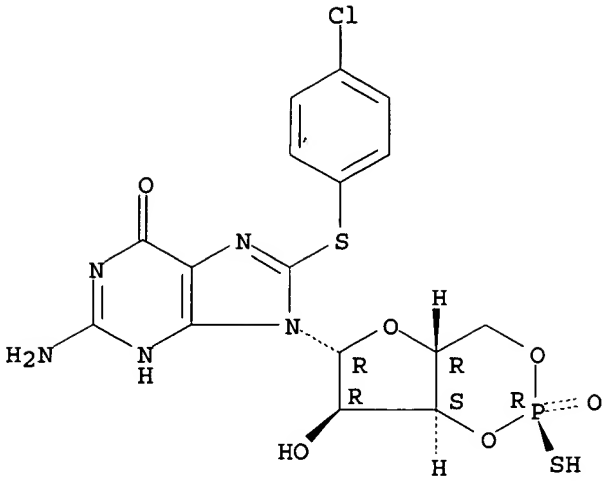
RN 129735-01-9 HCAPLUS
CN Adenosine, 8-[(4-chlorophenyl)thio]-, cyclic 3',5'-[hydrogen (R)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 153660-04-9 HCAPLUS
CN Guanosine, 8-[(4-chlorophenyl)thio]-, cyclic 3',5'-[hydrogen (R)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L63 ANSWER 31 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1995:934586 HCAPLUS
DOCUMENT NUMBER: 124:3641
TITLE: Expression, purification, and characterization of the cGMP-dependent protein kinases Iβ and II using the baculovirus system
AUTHOR(S): Poehler, Doris; Butt, Elke; Meissner, Jutta; Mueller, Stefan; Lohse, Martin; Walter, Ulrich; Lohmann, Suzanne M.; Jarchau, Thomas
CORPORATE SOURCE: Medizinische Universitaetsklinik, Labor fuer Klinische Biochemie, Josef-Schneider Str. 2, 97080, Wurzburg, Germany
SOURCE: FEBS Letters (**1995**), 374(3), 419-25
CODEN: FEBLAL; ISSN: 0014-5793
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English

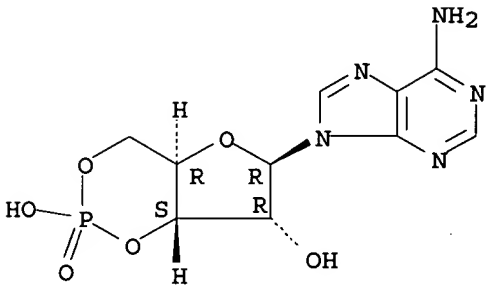
AB Detailed studies of differences in distinct cGMP kinase isoforms are highly dependent on expression of large amts. of these enzyme isoforms that are not easily purified by conventional methods. Here cGMP-dependent protein kinases, the type Iβ soluble form from human placenta, and the type II membrane-associated form from rat intestine, were each expressed in a baculovirus/Sf9 cell system and purified in milligram amts. by affinity chromatog. The expressed recombinant proteins displayed characteristics like those of their native counterparts. The cGK Iβ form was expressed as a 76 kDa protein predominantly found in the cytosol fraction, whereas cGK II was expressed as an 86 kDa protein predominantly associated with the membrane fraction. The apparent Ka and Vmax of cGMP for activation of cGK Iβ were 0.5 μM and 3.4 μmol/min/mg, and for cGK II were 0.04 μM and 1.8 μmol/min/mg.

IT **60-92-4**, CAMP **7665-99-8**, CGMP **23583-48-4**, 8-Bromo-cAMP **31356-94-2**, 8-Bromo-cGMP **54364-02-2**, 8-(4-Chlorophenylthio)-cGMP **73208-40-9 78080-27-0 120912-54-1 153660-04-9**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(expression, purification, and characterization of cGMP-dependent protein kinases Iβ and II using baculovirus system)

RN 60-92-4 HCAPLUS

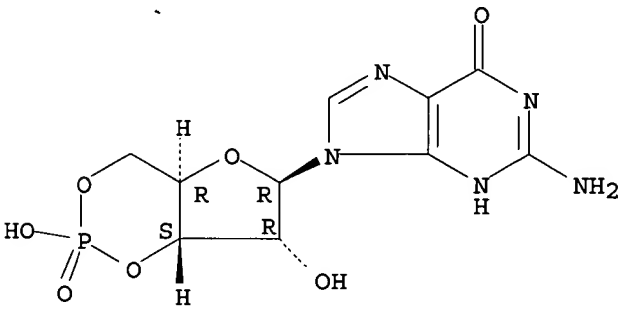
CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



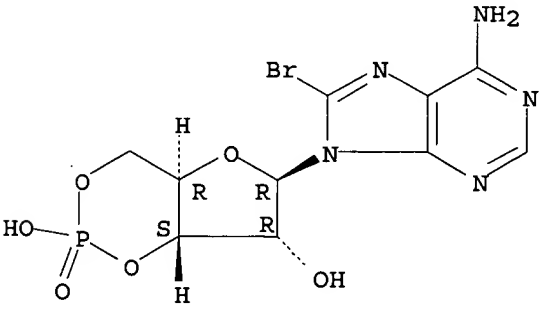
RN 7665-99-8 HCAPLUS
CN Guanosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



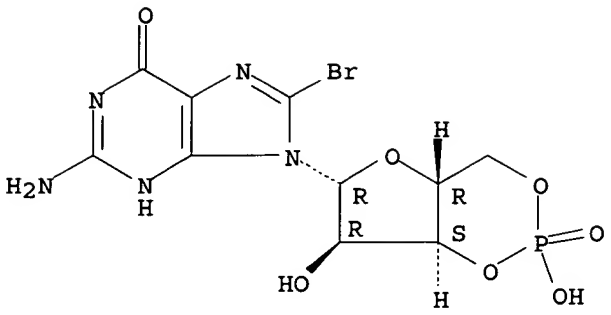
RN 23583-48-4 HCAPLUS
CN Adenosine, 8-bromo-, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



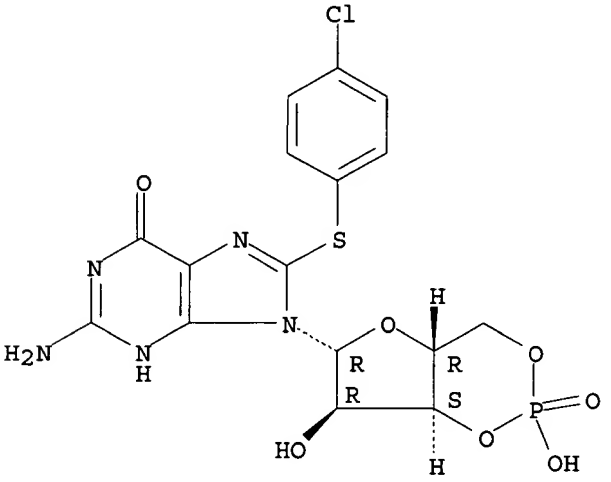
RN 31356-94-2 HCAPLUS
CN Guanosine, 8-bromo-, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



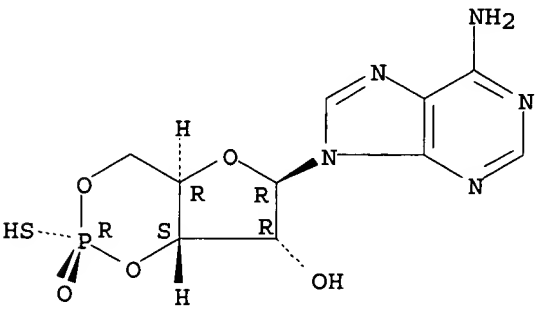
RN 54364-02-2 HCAPLUS
CN Guanosine, 8-[(4-chlorophenyl)thio]-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 73208-40-9 HCAPLUS
CN Adenosine, cyclic 3',5'-[hydrogen [P(R)]-phosphorothioate] (9CI) (CA INDEX NAME)

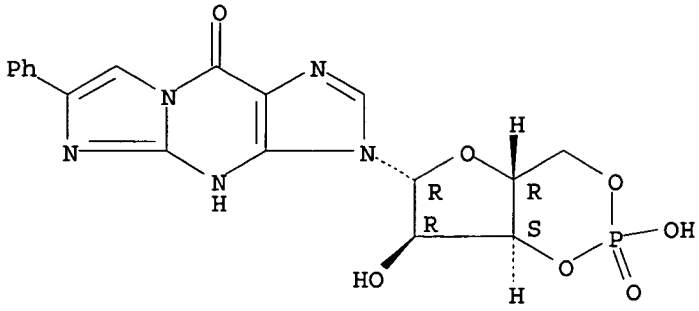
Absolute stereochemistry.



RN 78080-27-0 HCAPLUS
CN 9H-Imidazo[1,2-a]purin-9-one, 3,4-dihydro-6-phenyl-3-(3,5-O-phosphinico-

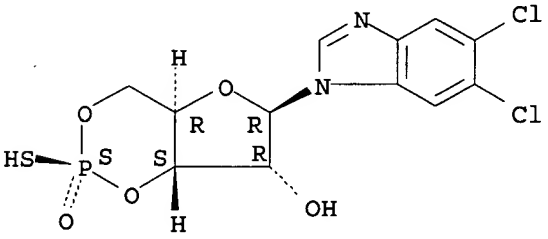
β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



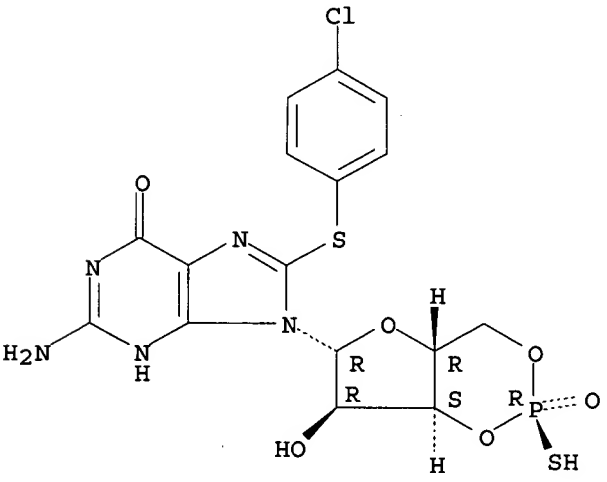
RN 120912-54-1 HCAPLUS
CN 1H-Benzimidazole, 5,6-dichloro-1-[3,5-O-[(S)-mercaptophosphinylidene]-β-D-ribofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 153660-04-9 HCAPLUS
CN Guanosine, 8-[(4-chlorophenyl)thio]-, cyclic 3',5'-[hydrogen (R)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **141588-27-4P**, Protein kinase G
RL: BOC (Biological occurrence); BPN (Biosynthetic preparation); BPR

(Biological process); BSU (Biological study, unclassified); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation); PROC (Process)
(expression, purification, and characterization of cGMP-dependent protein kinases Iβ and II using baculovirus system)
RN 141588-27-4 HCAPLUS
CN Kinase (phosphorylating), protein, G (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

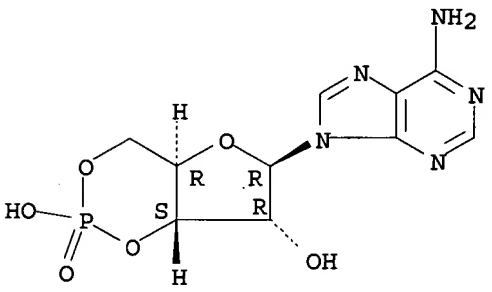
L63 ANSWER 32 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1995:809570 HCAPLUS
DOCUMENT NUMBER: 123:221550
TITLE: Comparative structure-affinity relations by MTD for binding of cycloadenosine monophosphate derivatives to protein kinase receptors
AUTHOR(S): Muresan, Sorel; Bologa, Cristian; Chiriac, Adrian; Jastorff, Bernd; Kurunczi, Ludovic; Simon, Zeno
CORPORATE SOURCE: Inst. Bioorganic Chem., Univ. Bremen, Bremen, D-28334, Germany
SOURCE: Quantitative Structure-Activity Relationships (**1995**), 14(3), 242-8
CODEN: QSARDI; ISSN: 0931-8771
PUBLISHER: VCH
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A "testkit" series of 27 derivs. of cAMP with various substituents in position 1, 2, 6 and 8 and within the purine cycle, thiophosphoric acid derivs. (with equatorial or axial S-atom) also included, were used to map four receptor sites of the R-subunit of cAMP dependent phosphokinases I and II, namely labile and stable receptors AI, BI, AII and BII. A QSAR by the MTD method was applied for the four series of activities, together with the relative nitrogen base hydrophobicity (IgKw), elec. charge of the position 6-substituent (qN6+) and an indicator variable (δ = 1 for equatorial thiophosphoric derivs.). Correlation coeffs. between r = 0.836 and 0.948 were obtained and the reliability of QSAR results was tested by a cross validation-like procedure. Characteristic steric features (concerning the effects of substituents in different nitrogen-base positions) were sep. obtained for each receptor. For AI and BI receptor there is a neg. charged receptor group interacting with substituents in position 6 of cAMP derivs. BI and BII receptors are of a marked hydrophobic character. Thiophosphoric acid derivs., especially those with equatorial S-atom, have a decreased affinity for all four receptors. The results are compared with other QSAR studies of the group, concerning different series of cAMP derivs.
IT **127407-08-3**, Receptor protein kinase
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(cAKI and II; comparative structure-affinity relations by MTD for binding of cycloadenosine monophosphate derivs. to protein kinase receptors)
RN 127407-08-3 HCAPLUS
CN Kinase (phosphorylating), G protein-coupled receptor protein (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **60-92-4 3545-76-4 7665-99-8 13117-60-7**
23583-48-4 28048-42-2 31319-73-0
41941-56-4 42467-66-3 53303-84-7
71774-13-5 73208-40-9 76461-19-3

86562-09-6 86562-10-9 120912-54-1
127634-22-4 127634-23-5 129693-10-3
129693-14-7 129693-17-0 129693-18-1
142754-27-6 142754-28-7 142754-30-1
142754-31-2 145757-00-2
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(comparative structure-affinity relations by MTD for binding of cycloadenosine monophosphate derivs. to protein kinase receptors)

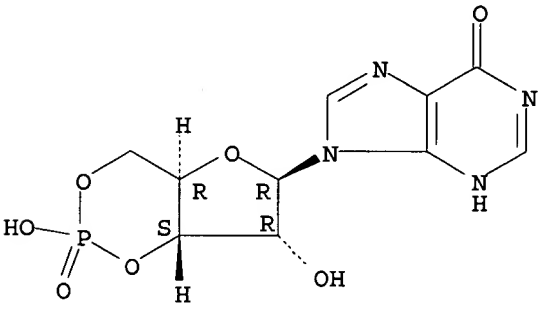
RN 60-92-4 HCAPLUS
CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



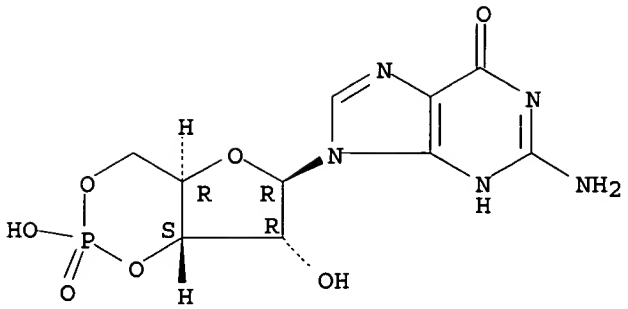
RN 3545-76-4 HCAPLUS
CN Inosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



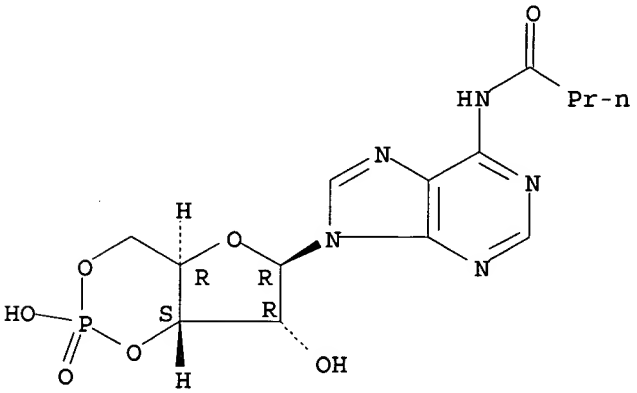
RN 7665-99-8 HCAPLUS
CN Guanosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



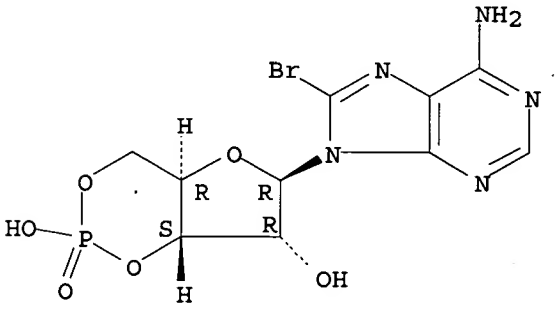
RN 13117-60-7 HCAPLUS
CN Adenosine, N-(1-oxobutyl)-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



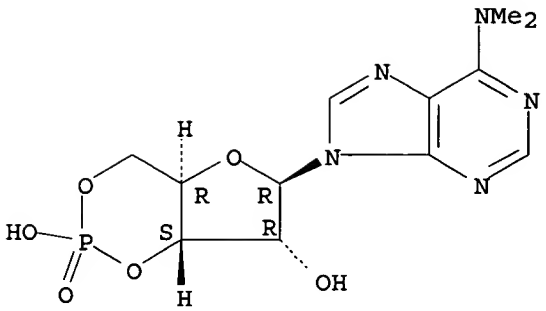
RN 23583-48-4 HCAPLUS
CN Adenosine, 8-bromo-, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



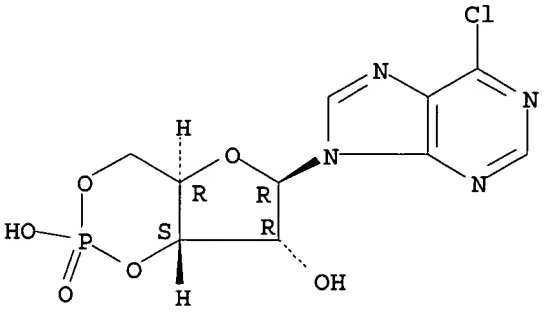
RN 28048-42-2 HCAPLUS
CN Adenosine, N,N-dimethyl-, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



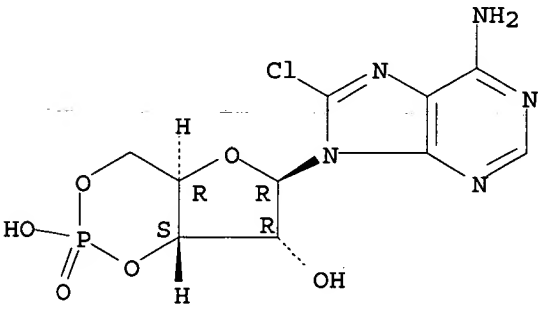
RN 31319-73-0 HCAPLUS
CN 9H-Purine, 6-chloro-9-(3,5-O-phosphinico-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



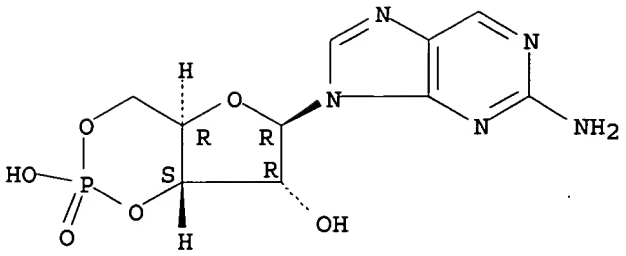
RN 41941-56-4 HCAPLUS
CN Adenosine, 8-chloro-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



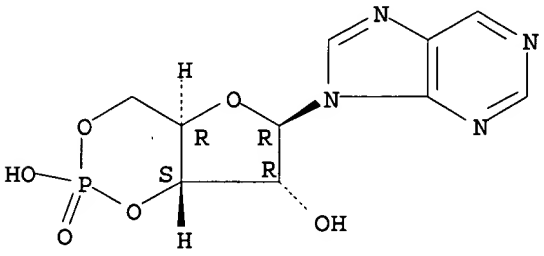
RN 42467-66-3 HCAPLUS
CN 9H-Purin-2-amine, 9-(3,5-O-phosphinico-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



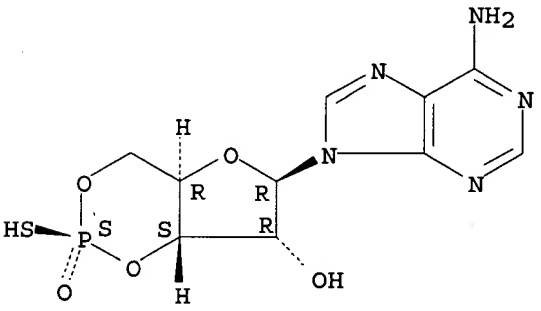
RN 53303-84-7 HCAPLUS
CN 9H-Purine, 9-(3,5-O-phosphinico-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



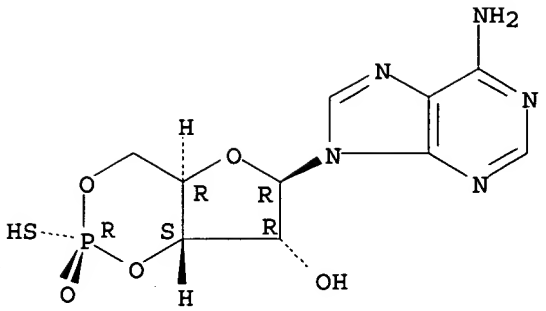
RN 71774-13-5 HCAPLUS
CN Adenosine, cyclic 3',5'-[hydrogen (S)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



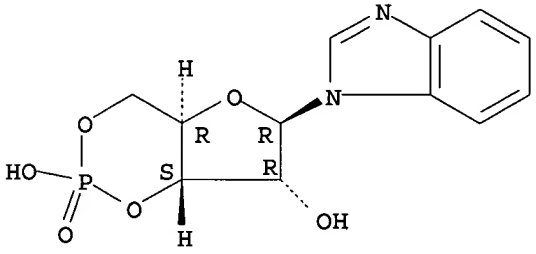
RN 73208-40-9 HCAPLUS
CN Adenosine, cyclic 3',5'-[hydrogen [P(R)]-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



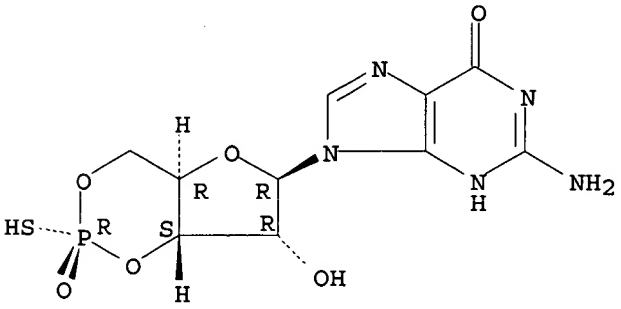
RN 76461-19-3 HCAPLUS
CN 1H-Benzimidazole, 1-(3,5-O-phosphinico-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



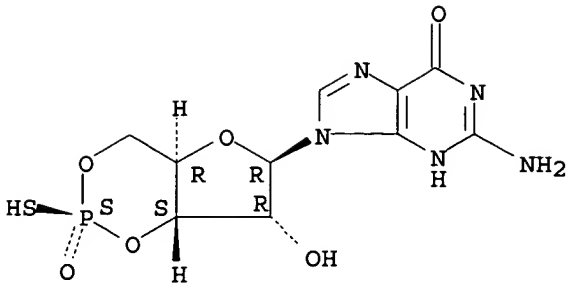
RN 86562-09-6 HCAPLUS
CN Guanosine, cyclic 3',5'-[(R)-hydrogen phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



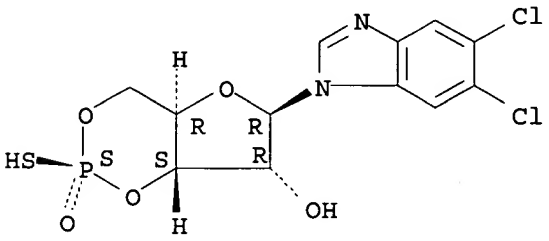
RN 86562-10-9 HCAPLUS
CN Guanosine, cyclic 3',5'-[(S)-hydrogen phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



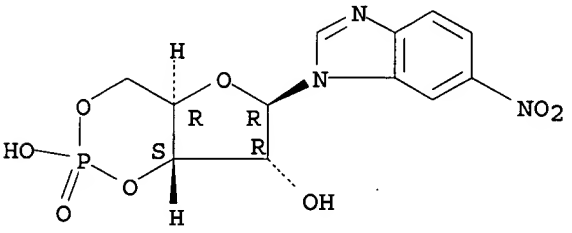
RN 120912-54-1 HCAPLUS
CN 1H-Benzimidazole, 5,6-dichloro-1-[3,5-O-[(S)-mercaptophosphinylidene]-β-D-ribofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



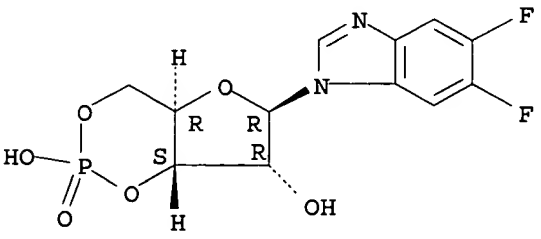
RN 127634-22-4 HCAPLUS
CN 1H-Benzimidazole, 6-nitro-1-(3,5-O-phosphinico-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



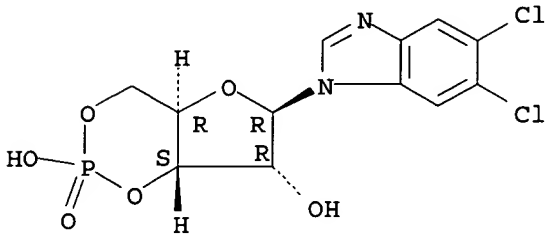
RN 127634-23-5 HCAPLUS
CN 1H-Benzimidazole, 5,6-difluoro-1-(3,5-O-phosphinico-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



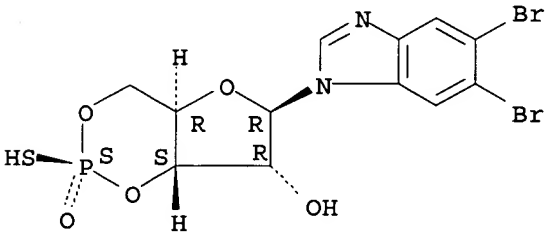
RN 129693-10-3 HCAPLUS
CN 1H-Benzimidazole, 5,6-dichloro-1-(3,5-O-phosphinico-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



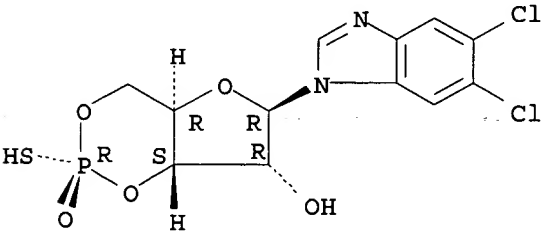
RN 129693-14-7 HCAPLUS
CN 1H-Benzimidazole, 5,6-dibromo-1-[3,5-O-[(S)-mercaptophosphinylidene]-β-D-ribofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



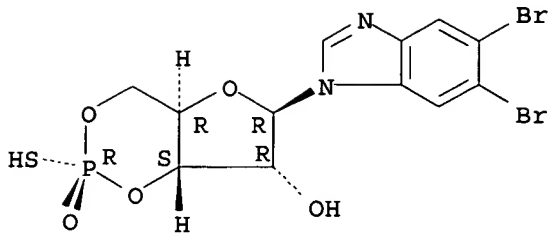
RN 129693-17-0 HCAPLUS
CN 1H-Benzimidazole, 5,6-dichloro-1-[3,5-O-[(R)-mercaptophosphinylidene]-β-D-ribofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



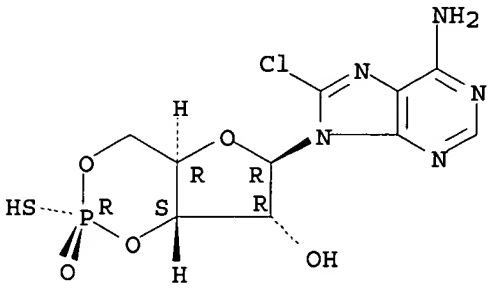
RN 129693-18-1 HCAPLUS
CN 1H-Benzimidazole, 5,6-dibromo-1-[3,5-O-[(R)-mercaptophosphinylidene]-β-D-ribofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



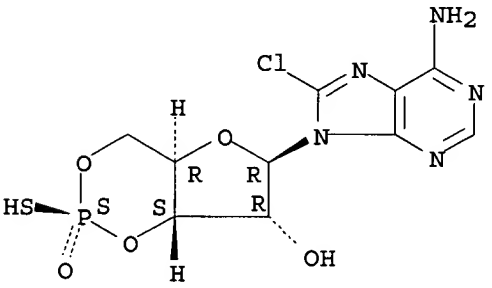
RN 142754-27-6 HCAPLUS
CN Adenosine, 8-chloro-, cyclic 3',5'-[hydrogen (R)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



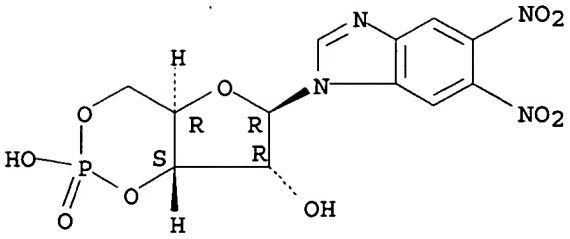
RN 142754-28-7 HCAPLUS
CN Adenosine, 8-chloro-, cyclic 3',5'-[hydrogen (S)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



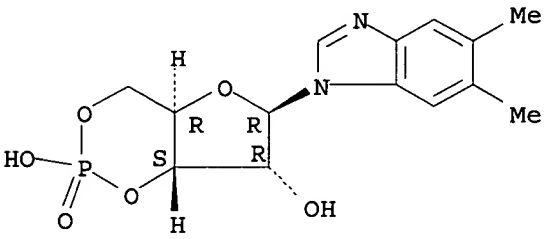
RN 142754-30-1 HCAPLUS
CN 1H-Benzimidazole, 5,6-dinitro-1-(3,5-O-phosphinico-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



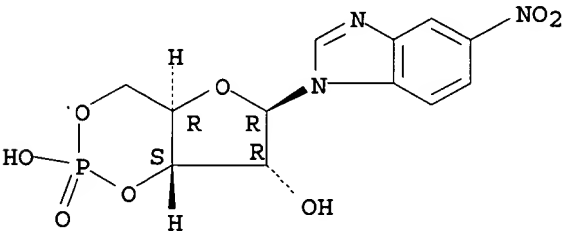
RN 142754-31-2 HCAPLUS
CN 1H-Benzimidazole, 5,6-dimethyl-1-(3,5-O-phosphinico-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 145757-00-2 HCAPLUS
CN 1H-Benzimidazole, 5-nitro-1-(3,5-O-phosphinico-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



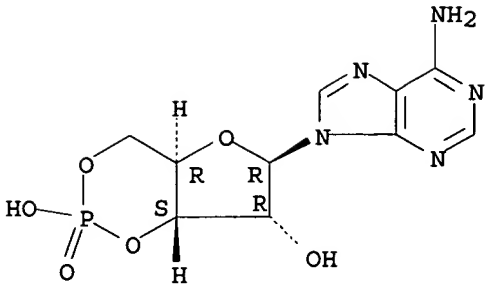
IT **9026-43-1**, Protein kinase
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(comparative structure-affinity relations by MTD for binding of cycloadenosine monophosphate derivs. to protein kinase receptors)
RN 9026-43-1 HCAPLUS
CN Kinase (phosphorylating), protein serine/threonine (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L63 ANSWER 33 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1995:787966 HCAPLUS
DOCUMENT NUMBER: 123:282000
TITLE: Novel (Rp)-cAMPS analogs as tools for inhibition of cAMP-kinase in cell culture. Basal cAMP-kinase activity modulates interleukin-1β action
AUTHOR(S): Gjertsen, Bjoern T.; Mellgren, Gunnar; Otten, Anne;

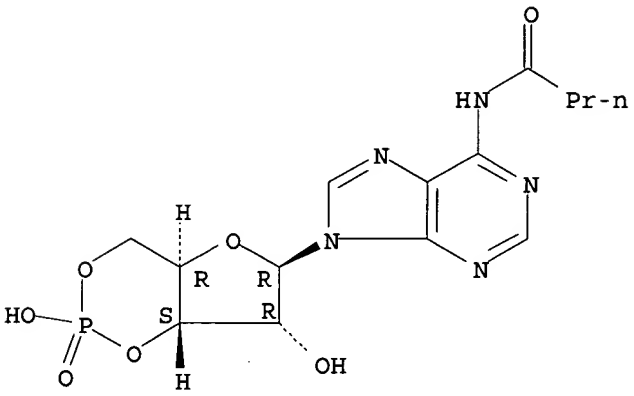
Maronde, Erik; Genieser, Hans-G.; Jastorff, Bernd; Vintermyr, Olav K.; McKnight, G. Stanley; Doeskeland, Stein O.
CORPORATE SOURCE: Dep. Anat. Cell Biol., Univ. Bergen, Bergen, N-5009, Norway
SOURCE: Journal of Biological Chemistry (**1995**), 270(35), 20599-607
CODEN: JBCHA3; ISSN: 0021-9258
PUBLISHER: American Society for Biochemistry and Molecular Biology
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Novel (Rp)-cAMPS analogs differed widely in ability to antagonize cAMP activation of pure cAMP-dependent protein kinase I and II and to antagonize actions of cAMP on gene expression, shape change, apoptosis, DNA replication, and protein phosphorylation in intact cells. These differences were related to different abilities of the analogs to stabilize the holoenzyme form relative to the dissociated form of cAMP kinase type I and II. **(Rp)-8-Br-cAMPS** and **(Rp)-8-Cl-cAMPS** were the most potent cAMP antagonists for isolated type I kinase and for cells expressing mostly type I kinase, like IPC-81 leukemia cells, fibroblasts transfected with type I regulatory subunit (RI), and primary hepatocytes. It is proposed that **(Rp)-8-Br-cAMPS** or **(Rp)-8-Cl-cAMPS** should replace (Rp)-cAMPS as the first line cAMP antagonist, particularly for studies in cells expressing predominantly type I kinase. The phosphorylation of endogenous hepatocyte proteins was affected oppositely by **(Rp)-8-Br-cAMPS** and increased cAMP, indicating that **(Rp)-8-Br-cAMPS** inhibited basal cAMP-kinase activity. The inhibition of basal kinase activity was accompanied by enhanced DNA replication, an effect which could be reproduced by microinjected mutant cAMP-subresponsive RI. It is concluded that the basal cAMP-kinase activity exerts a tonic inhibition of hepatocyte replication. **(Rp)-8-Br-cAMPS** and microinjected RI also desensitized hepatocytes toward inhibition of DNA synthesis by interleukin-1β. This indicates that basal cAMP-kinase activity can have a permissive role for the action of another (interleukin-1β) signaling pathway.
IT **60-92-4**, CAMP **13117-60-7 30275-80-0 33823-18-6 34051-30-4 41941-66-6 73208-40-9 129693-13-6 129735-00-8 129735-01-9 142754-27-6 169335-91-5 169335-92-6**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
((Rp)-cAMPS analogs for inhibition of protein kinase A in cell culture)
RN 60-92-4 HCAPLUS
CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



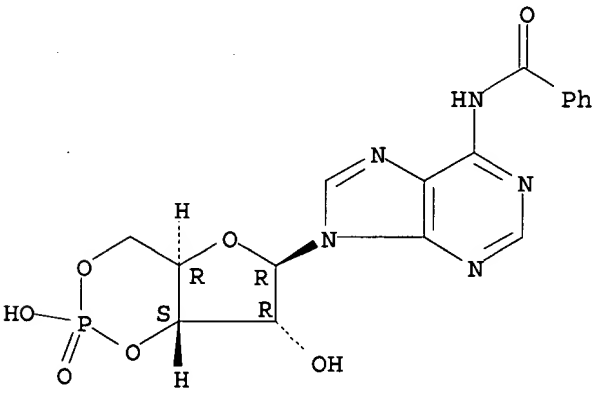
RN 13117-60-7 HCAPLUS
CN Adenosine, N-(1-oxobutyl)-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



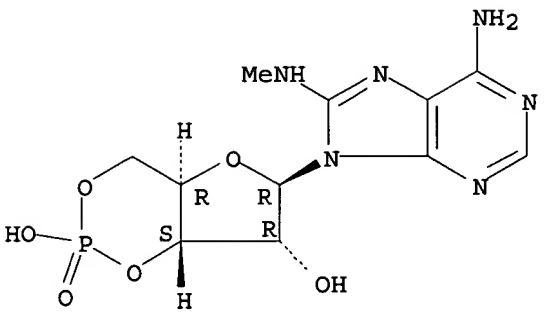
RN 30275-80-0 HCAPLUS
CN Adenosine, N-benzoyl-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



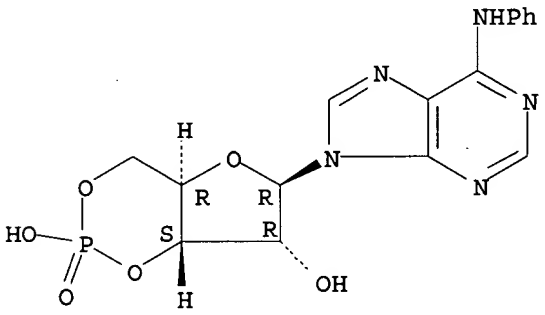
RN 33823-18-6 HCAPLUS
CN Adenosine, 8-(methylamino)-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



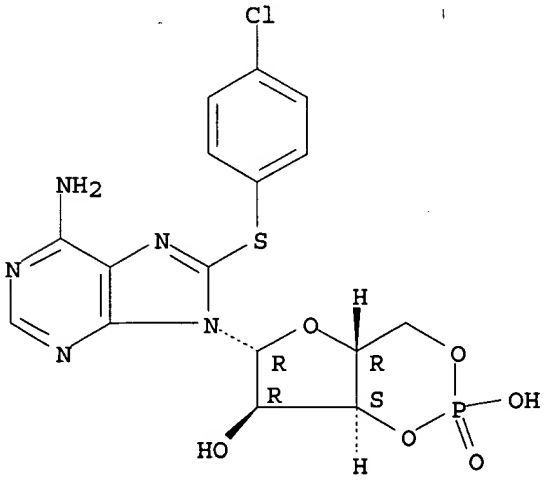
RN 34051-30-4 HCAPLUS
CN Adenosine, N-phenyl-, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



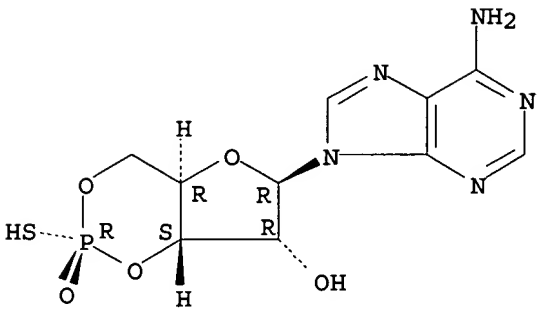
RN 41941-66-6 HCAPLUS
CN Adenosine, 8-[(4-chlorophenyl)thio]-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



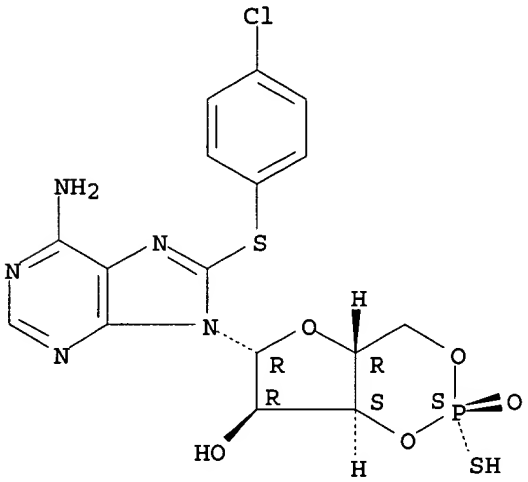
RN 73208-40-9 HCAPLUS
CN Adenosine, cyclic 3',5'-[hydrogen [P(R)]-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



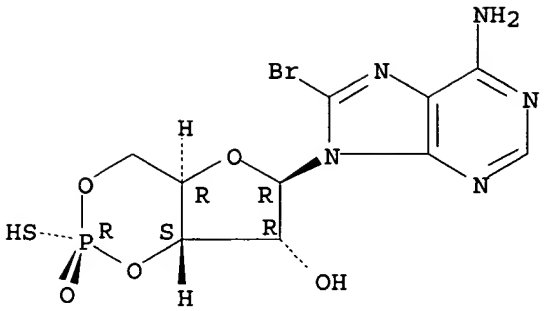
RN 129693-13-6 HCAPLUS
CN Adenosine, 8-[(4-chlorophenyl)thio]-, cyclic 3',5'-[hydrogen (S)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



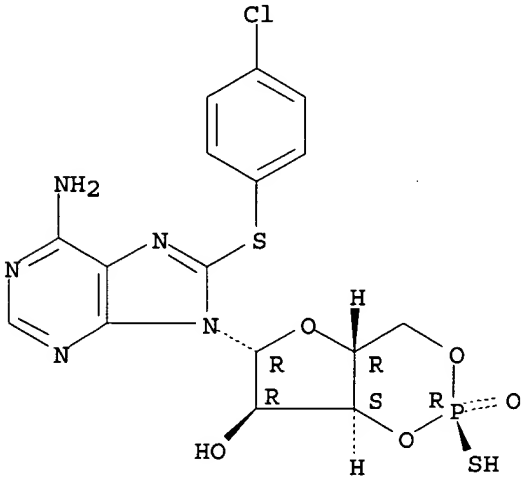
RN 129735-00-8 HCAPLUS
CN Adenosine, 8-bromo-, cyclic 3',5'-[hydrogen [P(R)]-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



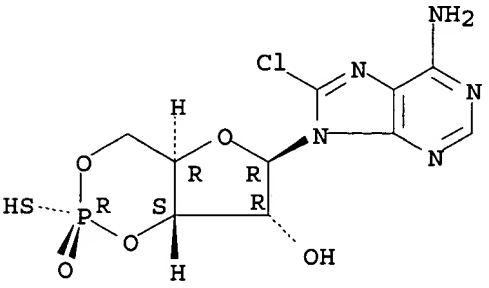
RN 129735-01-9 HCAPLUS
CN Adenosine, 8-[(4-chlorophenyl)thio]-, cyclic 3',5'-[hydrogen (R)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



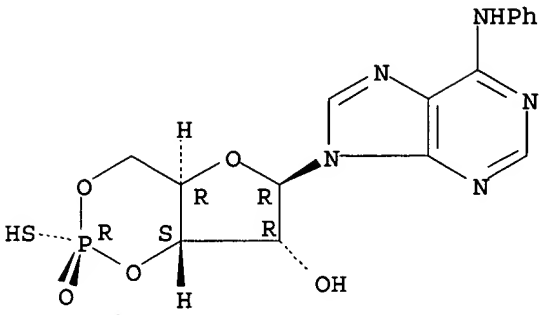
RN 142754-27-6 HCAPLUS
CN Adenosine, 8-chloro-, cyclic 3',5'-[hydrogen (R)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



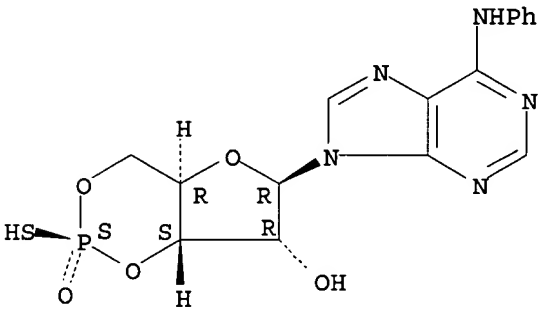
RN 169335-91-5 HCAPLUS
CN Adenosine, N-phenyl-, cyclic 3',5'-(hydrogen phosphorothioate), (R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 169335-92-6 HCAPLUS
CN Adenosine, N-phenyl-, cyclic 3',5'-(hydrogen phosphorothioate), (S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **142008-29-5**, CAMP-dependent protein kinase
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(I and II; (Rp)-cAMPS analogs for inhibition of protein kinase A in cell culture)
RN 142008-29-5 HCAPLUS
CN Kinase (phosphorylating), protein, A (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L63 ANSWER 34 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1995:656486 HCAPLUS
DOCUMENT NUMBER: 123:131990
TITLE: Evidence for several pathways of biological response to hydrolyzable cAMP-analogs using a model system of apoptosis in IPC-81 leukemia cells
AUTHOR(S): Ruchaud, S.; Zorn, M.; Davilar-Villar, E.; Genieser, H. G.; Hoffmann, C.; Gjersten, B. T.; Doeskeland, S. O.; Jastorff, B.; Lanoote, M.
CORPORATE SOURCE: Centre G. Hayfem, Hopital St-Louis, Paris, Fr.
SOURCE: Cellular Pharmacology (**1995**), 2(3), 127-40
CODEN: CEPHEG; ISSN: 1351-3214
PUBLISHER: Macmillan Scientific & Medical Division
DOCUMENT TYPE: Journal
LANGUAGE: English

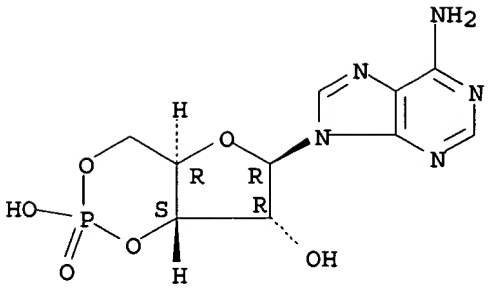
AB Degradable and undegradable cAMP analogs with a wide range of rationally selected (testkit concept) chemical modifications were studied for their apoptotic potency in the rat IPC-81 model for acute myelocytic leukemia. The biol. activity of corresponding 5'AMP and adenosine metabolites was compared. To discriminate a cA-kinase response from non-kinase effects the authors used a subclone of the IPC-81 line with a sub-responsiveness to cA-kinase I activation by cAMP analogs. As proven by HPLC, only cAMP analogs with an axial (Sp) and equatorial (Rp) substitution at the phosphate moiety were partially or totally resistant against metabolism in cell culture. Heat inactivation of serum only reduced but not prevented the formation of metabolites. The results gave different dose responses due to the type of modification at the signal mols. and the type of cell line. Undegradable cAMP analogs only induced apoptosis via the cA-kinase pathway in the two cell lines; most efficiently through the highly lipophilic, resistant and cA-kinase specific analog Sp-DCl-cBIMPS. The lipophilic cAMP antagonist Rp-8Cl-cAMPS inhibited the induction of apoptosis by its corresponding Sp-8Cl-cAMPS in a dose-dependent manner. Degradable cAMP analogs act via the cyclic nucleotides and/or their metabolites. Rationale for the different types of responses based on structure activity relations are discussed and mechanisms of actions are proposed. The authors' study supports an essential participation of the cAMP signaling pathway in induction of apoptosis, if a highly cooperative way of cell death is induced. Exclusively via the cAMP signaling cascade, an analog will act only if the derivative is undegradable, highly membrane permeable and a potent cA-kinase activator. Degradable analogs exhibit their effects through diverse mechanisms. Detailed biochem. and cell biol. studies with the complete set of catabolites and metabolites of those derivs., which exhibit the highest activity, allow the design of a new generation of nucleosides and nucleotides with high, hopefully cell type selective, potential for apoptosis in tumor cells.

IT **60-92-4**, CAMP **146-92-9 4061-78-3**
4294-16-0, N6-Benzyladenosine **13117-60-7**,
N6-Butyryl-cAMP **16719-36-1 23583-48-4**, 8-Bromo-cAMP
30275-80-0, N6-Benzoyl-cAMP **30685-40-6**, 8-Amino-cAMP
31319-73-0 33823-18-6, 8-Methylamino-cAMP
39023-61-5 39023-65-9, Adenosine, 2-chloro-, cyclic
3',5'-(hydrogen phosphate) **41941-56-4**, 8-Chloro-cAMP
41941-66-6, 8-(4-Chlorophenylthio)-cAMP **42467-66-3**
53294-70-5 71774-13-5 73208-40-9
82927-68-2 120912-54-1 124854-63-3, Adenosine,
2-chloro-, cyclic 3',5'-(hydrogen phosphorothioate), (S)-
127634-20-2 127634-21-3 129693-10-3
129693-12-5 142754-27-6 142754-28-7
166530-67-2 166530-68-3
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(evidence for several pathways of biol. response to hydrolyzable cAMP-analogs using a model system of apoptosis in IPC-81 leukemia cells)

RN 60-92-4 HCAPLUS

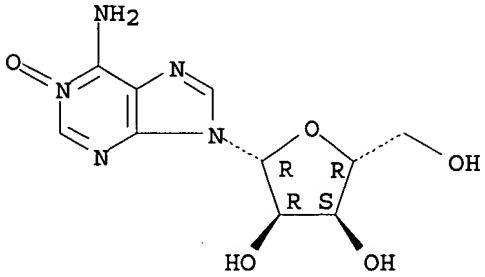
CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



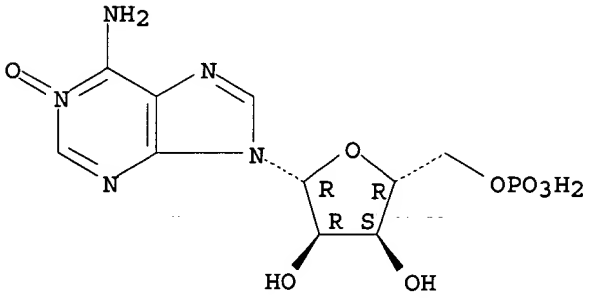
RN 146-92-9 HCAPLUS
CN Adenosine, 1-oxide (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



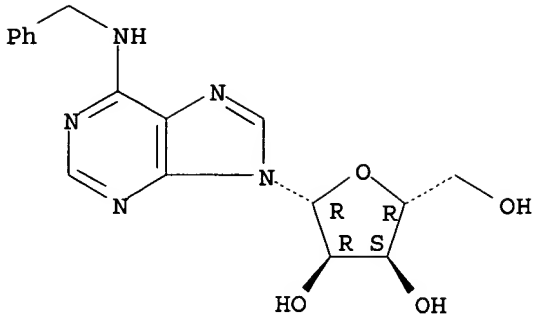
RN 4061-78-3 HCAPLUS
CN 5'-Adenylic acid, 1-oxide (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



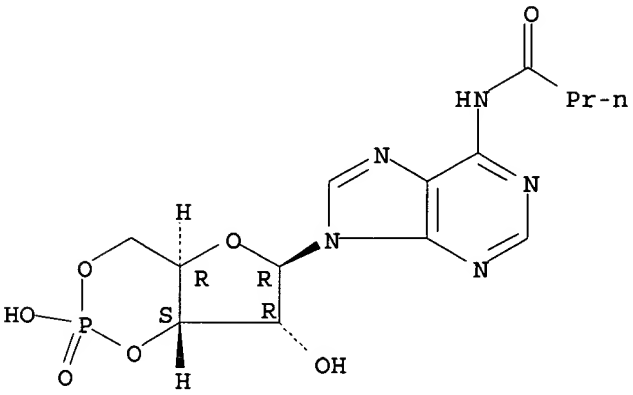
RN 4294-16-0 HCAPLUS
CN Adenosine, N-(phenylmethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



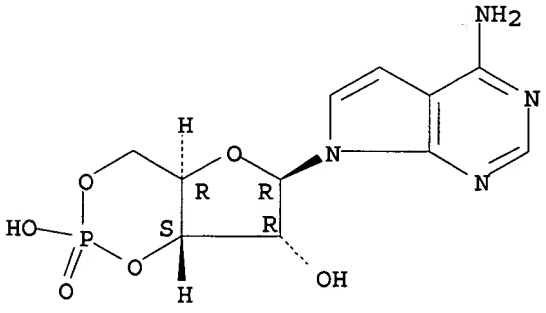
RN 13117-60-7 HCAPLUS
CN Adenosine, N-(1-oxobutyl)-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



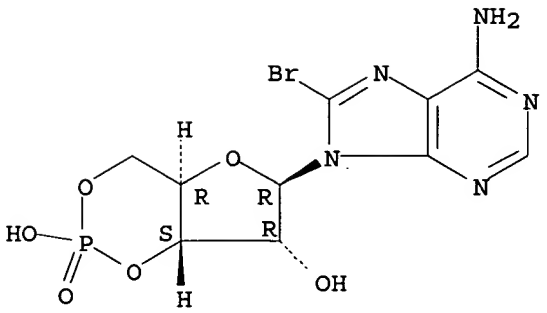
RN 16719-36-1 HCAPLUS
CN 7H-Pyrrolo[2,3-d]pyrimidin-4-amine, 7-(3,5-O-phosphinico-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



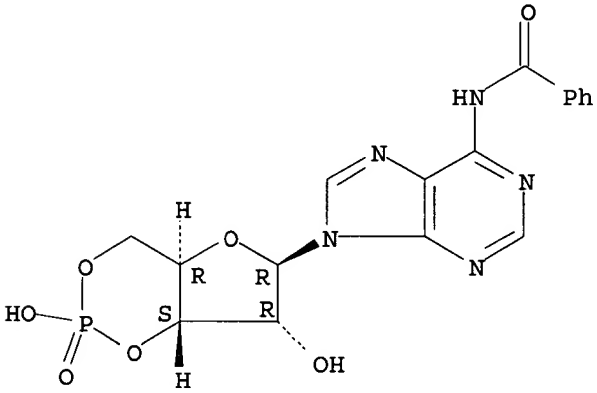
RN 23583-48-4 HCAPLUS
CN Adenosine, 8-bromo-, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



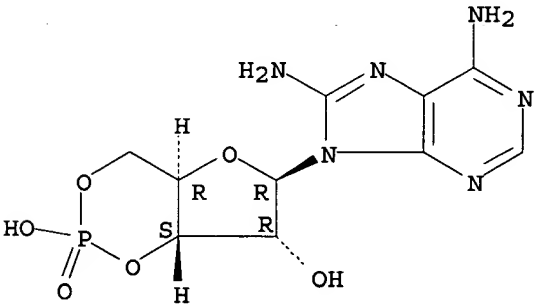
RN 30275-80-0 HCAPLUS
CN Adenosine, N-benzoyl-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



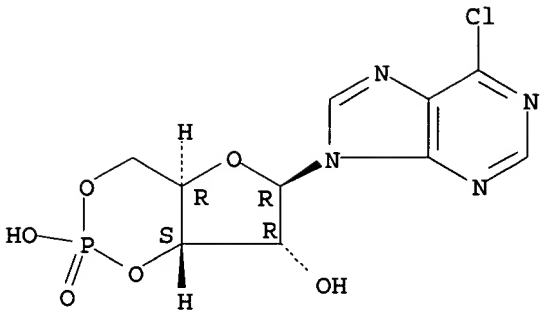
RN 30685-40-6 HCAPLUS
CN Adenosine, 8-amino-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



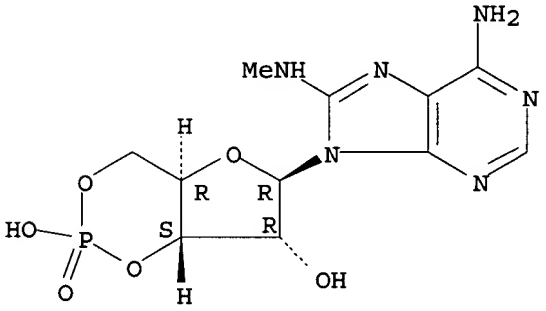
RN 31319-73-0 HCAPLUS
CN 9H-Purine, 6-chloro-9-(3,5-O-phosphinico-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



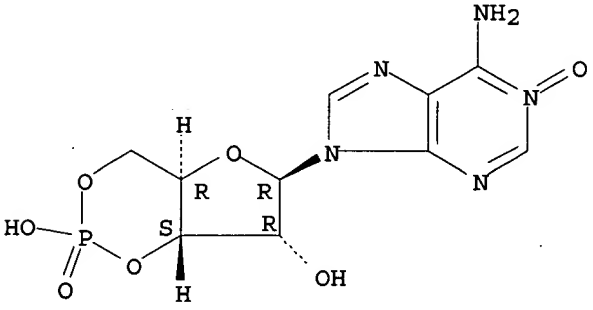
RN 33823-18-6 HCAPLUS
CN Adenosine, 8-(methylamino)-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



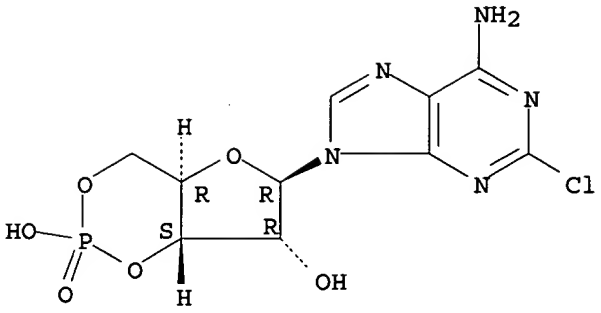
RN 39023-61-5 HCAPLUS
CN Adenosine, cyclic 3',5'-(hydrogen phosphate), 1-oxide (9CI) (CA INDEX NAME)

Absolute stereochemistry.



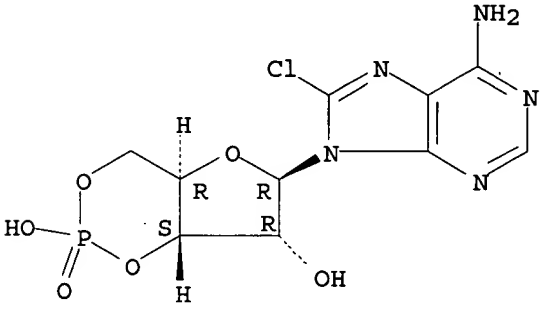
RN 39023-65-9 HCAPLUS
CN Adenosine, 2-chloro-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



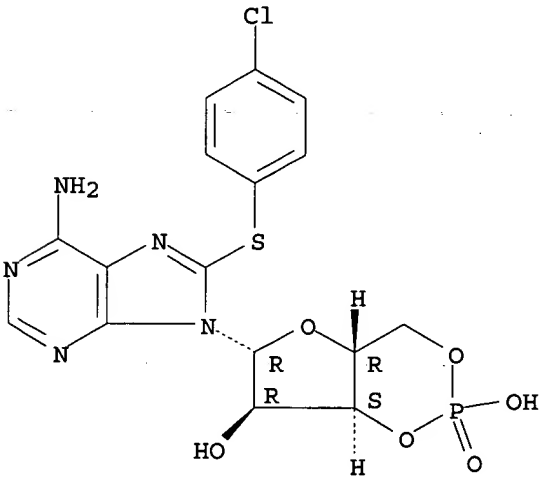
RN 41941-56-4 HCAPLUS
CN Adenosine, 8-chloro-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 41941-66-6 HCAPLUS
CN Adenosine, 8-[(4-chlorophenyl)thio]-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

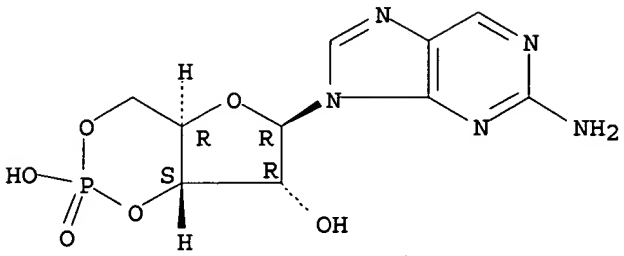
Absolute stereochemistry.



RN 42467-66-3 HCAPLUS
CN 9H-Purin-2-amine, 9-(3,5-O-phosphinico-β-D-ribofuranosyl)- (9CI) (CA

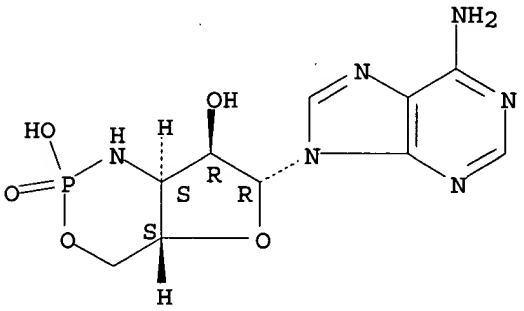
INDEX NAME)

Absolute stereochemistry.



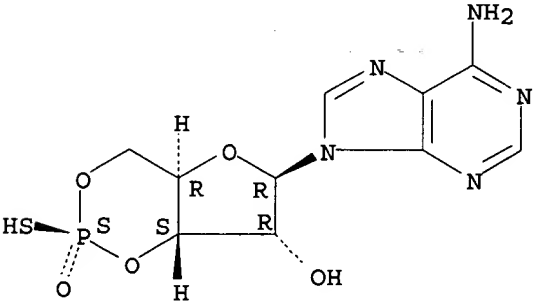
RN 53294-70-5 HCAPLUS
CN 2H-Furo[3,2-d][1,3,2]oxazaphosphorin-7-ol, 6-(6-amino-9H-purin-9-yl)hexahydro-2-hydroxy-, 2-oxide, [4aS-(4aα,6β,7α,7a.beta.)]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



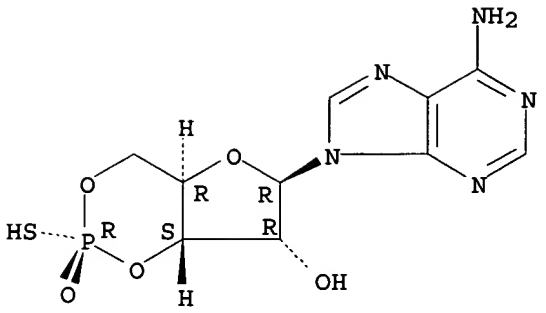
RN 71774-13-5 HCAPLUS
CN Adenosine, cyclic 3',5'-[hydrogen (S)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



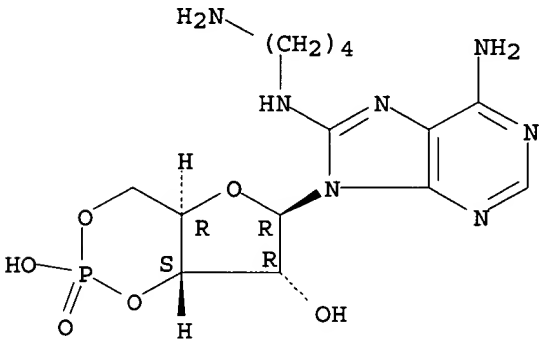
RN 73208-40-9 HCAPLUS
CN Adenosine, cyclic 3',5'-[hydrogen [P(R)]-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



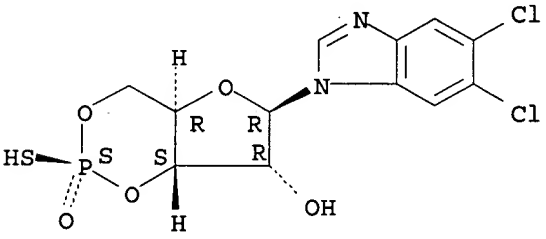
RN 82927-68-2 HCAPLUS
CN Adenosine, 8-[(4-aminobutyl)amino]-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



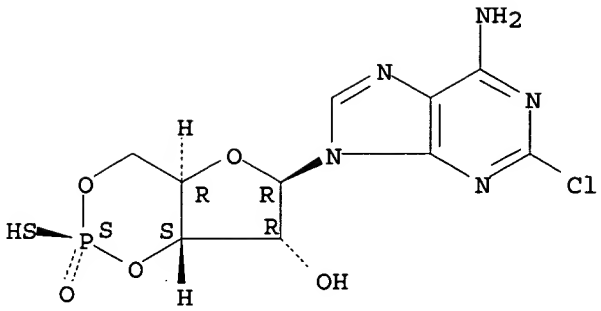
RN 120912-54-1 HCAPLUS
CN 1H-Benzimidazole, 5,6-dichloro-1-[3,5-O-[(S)-mercaptophosphinylidene]-β-D-ribofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



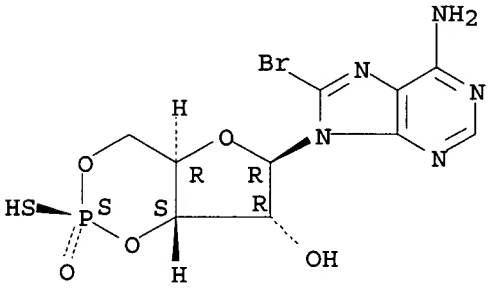
RN 124854-63-3 HCAPLUS
CN Adenosine, 2-chloro-, cyclic 3',5'-[(S)-hydrogen phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



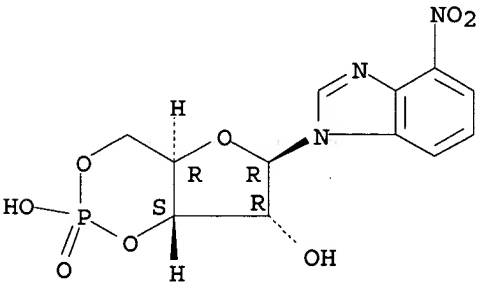
RN 127634-20-2 HCAPLUS
CN Adenosine, 8-bromo-, cyclic 3',5'-[hydrogen (S)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



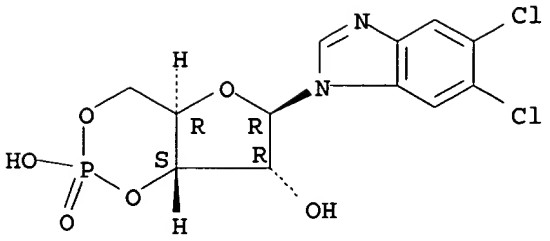
RN 127634-21-3 HCAPLUS
CN 1H-Benzimidazole, 4-nitro-1-(3,5-O-phosphinico-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



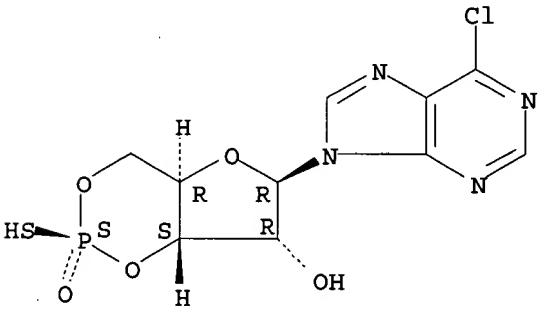
RN 129693-10-3 HCAPLUS
CN 1H-Benzimidazole, 5,6-dichloro-1-(3,5-O-phosphinico-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



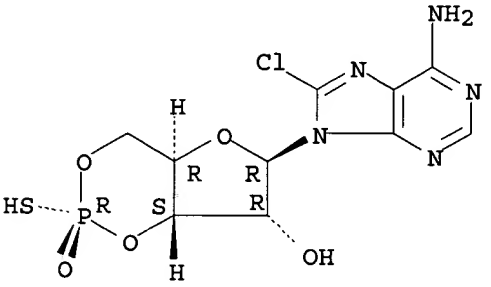
RN 129693-12-5 HCAPLUS
CN 9H-Purine, 6-chloro-9-[3,5-O-(mercaptophosphinylidene)-β-D-ribofuranosyl]-, (S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



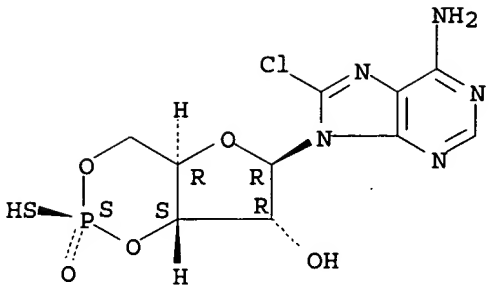
RN 142754-27-6 HCAPLUS
CN Adenosine, 8-chloro-, cyclic 3',5'-[hydrogen (R)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



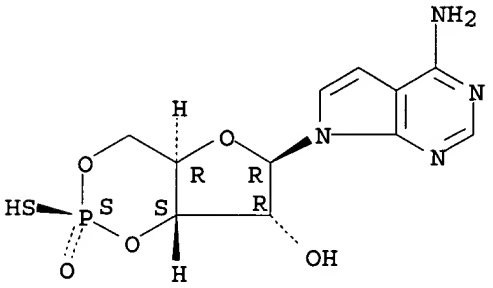
RN 142754-28-7 HCAPLUS
CN Adenosine, 8-chloro-, cyclic 3',5'-[hydrogen (S)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



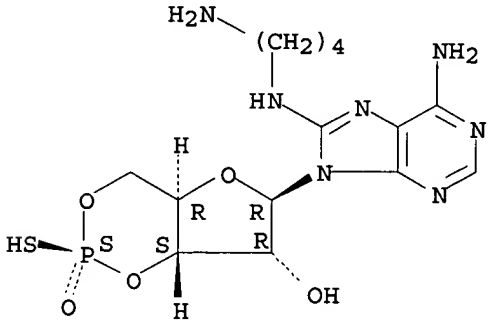
RN 166530-67-2 HCAPLUS
CN 7H-Pyrrolo[2,3-d]pyrimidin-4-amine, 7-[3,5-O-(mercaptophosphinylidene)-β-D-ribofuranosyl]-, (S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 166530-68-3 HCAPLUS
CN Adenosine, 8-[(4-aminobutyl)amino]-, cyclic 3',5'-(hydrogen phosphorothioate), (S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

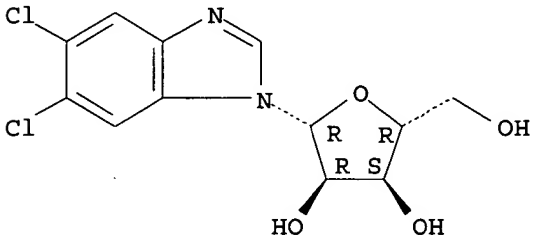


IT **53-85-0** **58-61-7**, Adenosine, biological studies **61-19-8**, 5'-AMP, biological studies **69-33-0**, 7-Deaza-adenosine **146-77-0**, 2-Chloroadenosine **2946-39-6**, 8-Bromo-adenosine **3868-33-5**, 8-Aminoadenosine **4360-05-8**, 5'-Adenylic acid, 3'-amino-3'-deoxy- **4546-54-7**, 2-Aminopurineriboside **5843-59-4**, 6-Chloropurine riboside 5'-monophosphate **21466-01-3**, 5'-Adenylic acid, 2-chloro- **23567-96-6**, 8-Bromo-5'-AMP **32115-08-5**, N6-Benzyl-cAMP **34051-12-2**, 8-Amino-5'-AMP **34408-14-5**, 8-Chloroadenosine

37676-40-7, 5'-Adenylic acid, 8-chloro-
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(evidence for several pathways of biol. response to hydrolyzable cAMP-analogs using a model system of apoptosis in IPC-81 leukemia cells)

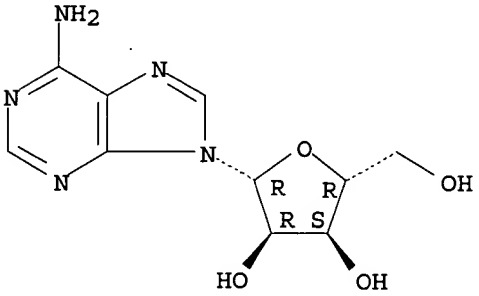
RN 53-85-0 HCAPLUS
CN 1H-Benzimidazole, 5,6-dichloro-1-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



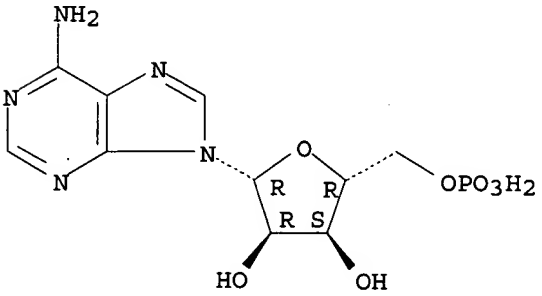
RN 58-61-7 HCAPLUS
CN Adenosine (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



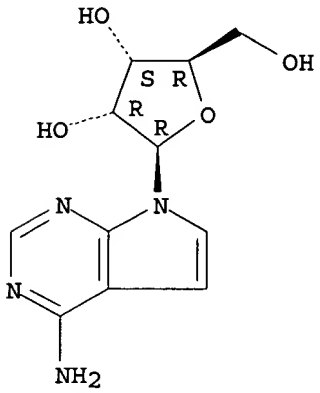
RN 61-19-8 HCAPLUS
CN 5'-Adenylic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



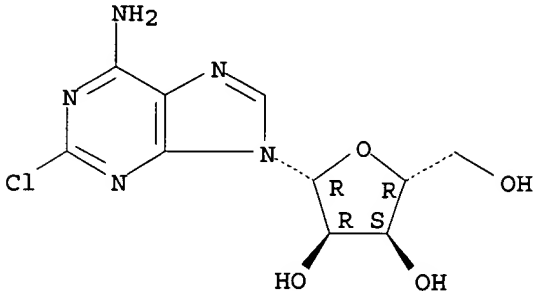
RN 69-33-0 HCAPLUS
CN 7H-Pyrrolo[2,3-d]pyrimidin-4-amine, 7-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



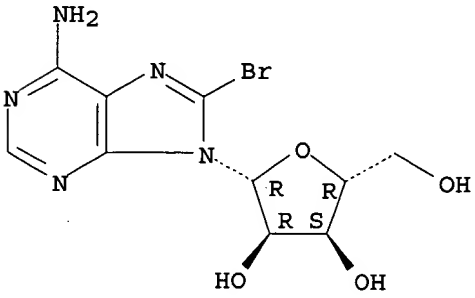
RN 146-77-0 HCAPLUS
CN Adenosine, 2-chloro- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



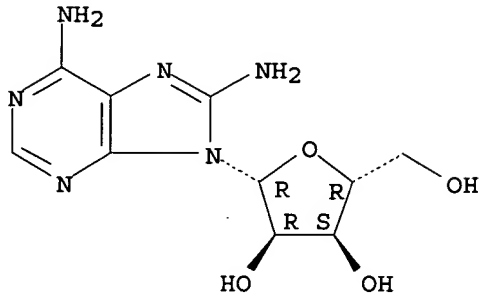
RN 2946-39-6 HCAPLUS
CN Adenosine, 8-bromo- (7CI, 8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



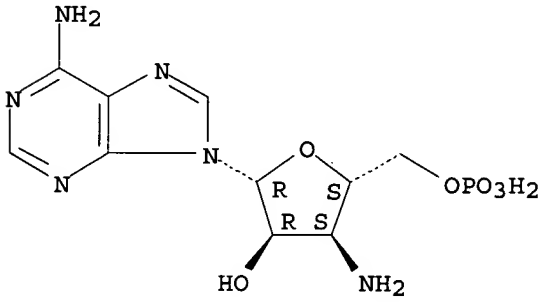
RN 3868-33-5 HCAPLUS
CN Adenosine, 8-amino- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



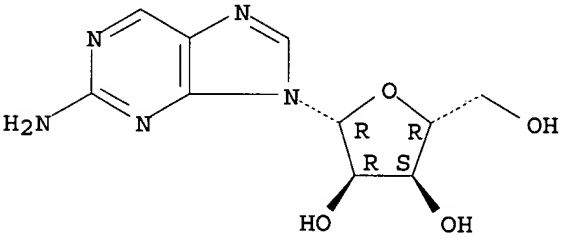
RN 4360-05-8 HCAPLUS
CN 5'-Adenylic acid, 3'-amino-3'-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



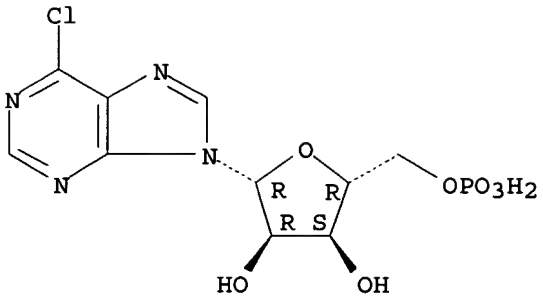
RN 4546-54-7 HCAPLUS
CN 9H-Purin-2-amine, 9-β-D-ribofuranosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



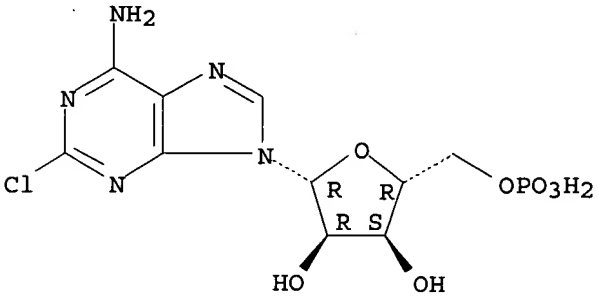
RN 5843-59-4 HCAPLUS
CN 9H-Purine, 6-chloro-9-(5-O-phosphono-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



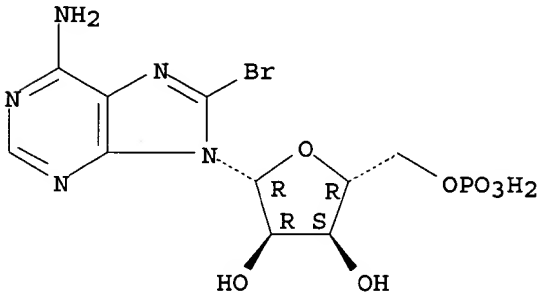
RN 21466-01-3 HCAPLUS
CN 5'-Adenylic acid, 2-chloro- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



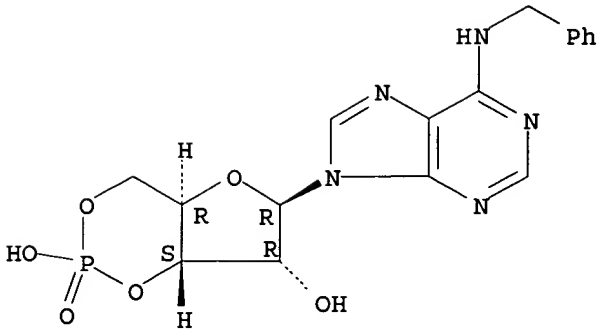
RN 23567-96-6 HCAPLUS
CN 5'-Adenylic acid, 8-bromo- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



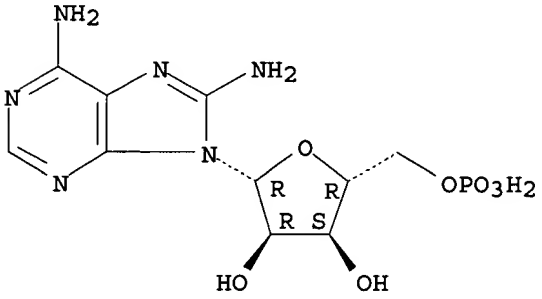
RN 32115-08-5 HCAPLUS
CN Adenosine, N-(phenylmethyl)-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



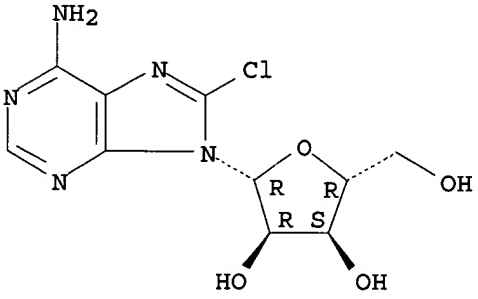
RN 34051-12-2 HCAPLUS
CN 5'-Adenylic acid, 8-amino- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



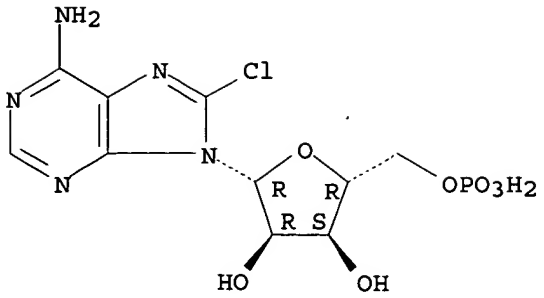
RN 34408-14-5 HCAPLUS
CN Adenosine, 8-chloro- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 37676-40-7 HCAPLUS
CN 5'-Adenylic acid, 8-chloro- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **142008-29-5**
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(evidence for several pathways of biol. response to hydrolyzable cAMP-analogs using a model system of apoptosis in IPC-81 leukemia cells)
RN 142008-29-5 HCAPLUS
CN Kinase (phosphorylating), protein, A (9CI) (CA INDEX NAME)

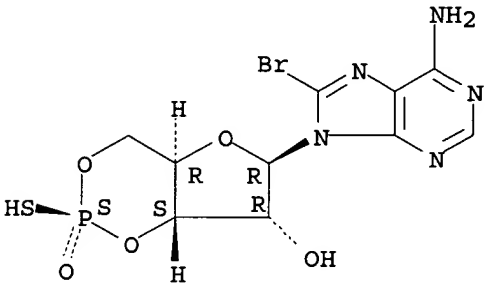
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L63 ANSWER 35 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1995:640175 HCAPLUS
DOCUMENT NUMBER: 123:108824
TITLE: Regulation of RCK1 currents with a cAMP analog via enhanced protein synthesis and direct channel phosphorylation
AUTHOR(S): Levin, Gal; Keren, Tal; Peretz, Tuvia; Chikvashvili, Dodo; Thornhill, William B.; Lotan, Ilana
CORPORATE SOURCE: Dep. Physiology and Pharmacology, Tel-Aviv Univ., Ramat Aviv, 69978, Israel
SOURCE: Journal of Biological Chemistry (**1995**), 270(24), 14611-18
CODEN: JBCHA3; ISSN: 0021-9258
PUBLISHER: American Society for Biochemistry and Molecular Biology
DOCUMENT TYPE: Journal
LANGUAGE: English
AB We have recently shown that the rat brain Kv1.1 (RCK1) voltage-gated K+ channel is partially phosphorylated in its basal state in Xenopus oocytes and can be further phosphorylated upon treatment for a short time with a cAMP analog. In this study, we show, by two-electrode voltage clamp anal., that whereas treatments for a short time with various cAMP analogs do not affect the channel function, prolonged treatment with 8-bromoadenosine 3',5'-cyclic monophosphorothioate ((Sp)-8-Br-cAMPS), a membrane-permeant cAMP analog, enhances the current amplitude. It also enhances the current amplitude through a mutant channel that cannot be phosphorylated by protein kinase A activation. The enhancement is inhibited in the presence of **(Rp)-8-Br-cAMPS**, a membrane-permeant protein kinase A inhibitor. Concomitant SDS-PAGE anal. reveals that this treatment not only brings about phosphorylation of the wild-type channel, but also increases the amts. of both wild-type and mutant channel proteins; the latter effect can be inhibited by cycloheximide, a protein synthesis inhibitor. In the presence of cycloheximide, the (Sp)-8-Br-cAMPS treatment enhances only the wild-type current amplitudes and induces accumulation of wild-type

channels in the plasma membrane of the oocyte. In summary, prolonged treatment with (Sp)-8-Br-cAMPS regulates RCK1 function via two pathways, a pathway leading to enhanced channel synthesis and a pathway involving channel phosphorylation that directs channels to the plasma membrane.

IT **127634-20-2**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(cAMP analog regulation of RCK1 potassium channel dependence on protein synthesis and channel phosphorylation)
RN 127634-20-2 HCAPLUS
CN Adenosine, 8-bromo-, cyclic 3',5'-[hydrogen (S)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **7440-09-7**, Potassium, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(cAMP analog regulation of RCK1 potassium channel dependence on protein synthesis and channel phosphorylation)
RN 7440-09-7 HCAPLUS
CN Potassium (8CI, 9CI) (CA INDEX NAME)

K

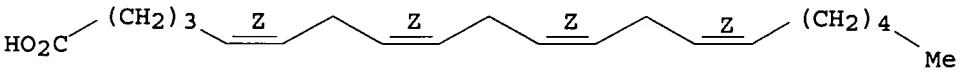
L63 ANSWER 36 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1995:388407 HCAPLUS
DOCUMENT NUMBER: 122:152037
TITLE: Effects of arachidonic acid on dopamine synthesis, spontaneous from the rat
AUTHOR(S): L'hirondel, M.; Cheramy, A.; Godeheu, G.; Glowinski, J.
CORPORATE SOURCE: INSERM U114, College France, Paris, Fr.
SOURCE: Journal of Neurochemistry (**1995**), 64(3), 1406-9
CODEN: JONRA9; ISSN: 0022-3042
PUBLISHER: Lippincott-Raven
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Arachidonic acid (AA) markedly stimulated, in a dose-dependent manner, the spontaneous release of [3H]dopamine ([3H]DA) continuously synthesized from [3H]tyrosine in purified synaptosomes from the rat striatum. As estimated by simultaneous measurement of the rate of [3H]H2O formation (an index of [3H]tyrosine conversion into [3H]DOPA), the AA response was associated with a progressive and dose-dependent reduction of [3H]DA synthesis. In contrast to

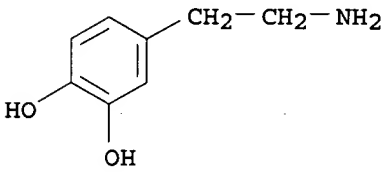
AA, arachidic acid, oleic acid, and the Me ester of AA (all at 10-4M) did not modify [3H]DA release. The AA (3 + 10-5M)-evoked release of [3H]DA was not affected by inhibiting AA metabolism, with either 3,8,11,14-eicosatetraynoic acid or metyrapone, suggesting that AA acts directly and not through one of its metabolites. AA also inhibited in a dose-dependent manner [3H]DA uptake into synaptosomes, with a complete blockade observed at 10-4M. However, AA (10-4M) still stimulated [3H]DA spontaneous release in the presence of either nomifensine or other DA uptake inhibitors, indicating that AA both inhibits DA reuptake and facilitates its release process. Finally, the AA (10-4M)-evoked release of [3H]DA was not affected by protein kinase A inhibitors (H-89 or **Rp-8-Br-cAMPs**) but was markedly
reduced in the presence of protein kinase C inhibitors (Ro 31-7549 or chelerythrine).

IT **506-32-1**, Arachidonic acid
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(effects of arachidonic acid on dopamine formation and release in synaptosomes from striatum)
RN 506-32-1 HCAPLUS
CN 5,8,11,14-Eicosatetraenoic acid, (5Z,8Z,11Z,14Z)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

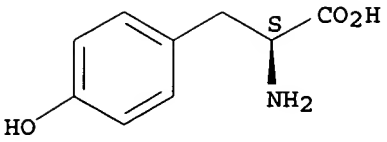


IT **51-61-6**, Dopamine, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); PROC (Process)
(effects of arachidonic acid on dopamine formation and release in synaptosomes from striatum)
RN 51-61-6 HCAPLUS
CN 1,2-Benzenediol, 4-(2-aminoethyl)- (9CI) (CA INDEX NAME)



IT **60-18-4**, Tyrosine, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(effects of arachidonic acid on dopamine formation from tyrosine in striatal synaptosomes)
RN 60-18-4 HCAPLUS
CN L-Tyrosine (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



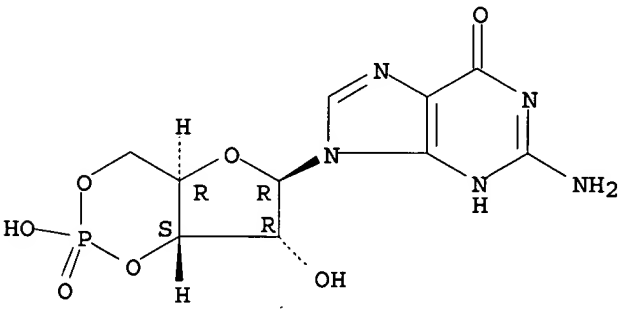
L63 ANSWER 37 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1995:142059 HCAPLUS
DOCUMENT NUMBER: 122:77464
TITLE: (Rp)-8-pCPT-cGMPS, a novel cGMP-dependent protein kinase inhibitor
AUTHOR(S): Butt, Elke; Eigenthaler, Martin; Genieser, Hans-Gottfried
CORPORATE SOURCE: Universitaet Wuerzburg, Labor fuer Klin. Biochemie, Josef-Schneider Str.2, 97080, Wurzburg, Germany
SOURCE: European Journal of Pharmacology, Molecular Pharmacology Section (**1994**), 269(2), 265-8
CODEN: EJPPET; ISSN: 0922-4106
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English

AB In the present study, the inhibitory effect of the cGMP analog (Rp)-8-(para-chlorophenylthio)guanosine-3',5'-cyclic monophosphorothioate ((Rp)-8-pCPT-cGMPS) on the cGMP-dependent protein kinase-mediated protein phosphorylation in intact human platelets was investigated. In vitro phosphorylation expts. with the substrate kemptide demonstrated an inhibition of the cGMP-dependent protein kinase by (Rp)-8-pCPT-cGMPS with a Ki of 0.5 μM. In intact human platelets, (Rp)-8-pCPT-cGMPS antagonized the activation of the cGMP-dependent protein kinase by 8-pCPT-cGMP without affecting cAMP-dependent protein kinase or cGMP-regulated phosphodiesterases. The data obtained suggest that (Rp)-8-pCPT-cGMPS may be a useful tool for studying the role of cGMP in vitro and in intact cells.

IT **7665-99-8**, Cyclic GMP **86562-09-6 141588-27-4 160385-87-5 160496-03-7**
RL: BSU (Biological study, unclassified); BIOL (Biological study)
((Rp)-8-pCPT-cGMPS as inhibitor of cGMP-dependent protein kinase)

RN 7665-99-8 HCAPLUS
CN Guanosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

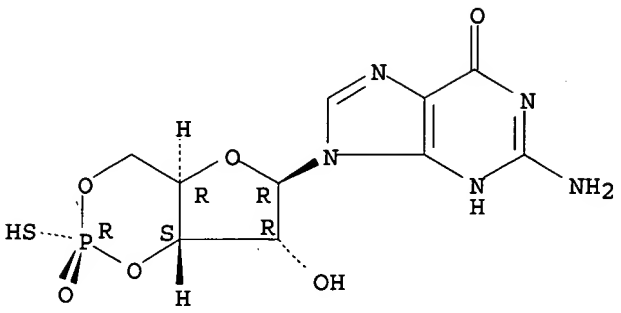
Absolute stereochemistry.



RN 86562-09-6 HCAPLUS
CN Guanosine, cyclic 3',5'-[(R)-hydrogen phosphorothioate] (9CI) (CA INDEX

NAME)

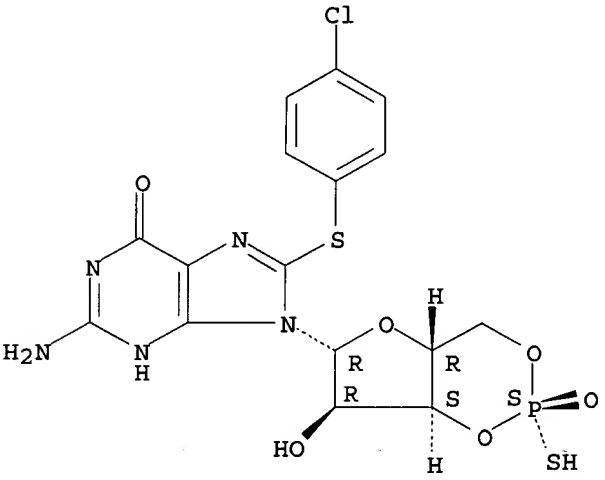
Absolute stereochemistry.



RN 141588-27-4 HCAPLUS
CN Kinase (phosphorylating), protein, G (9CI) (CA INDEX NAME)

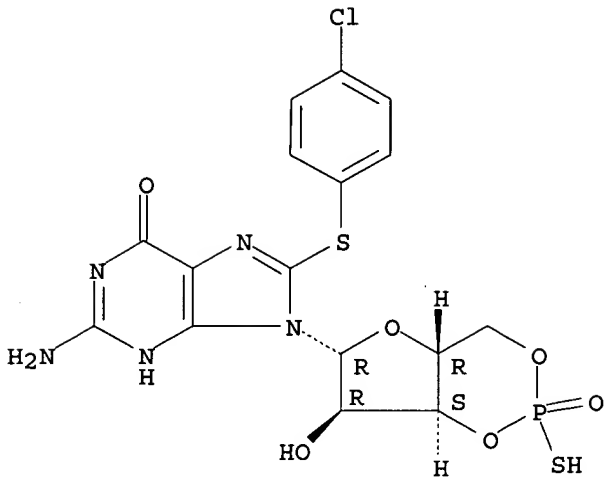
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 160385-87-5 HCAPLUS
CN Guanosine, 8-[(4-chlorophenyl)thio]-, cyclic 3',5'-[(S)-hydrogen phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



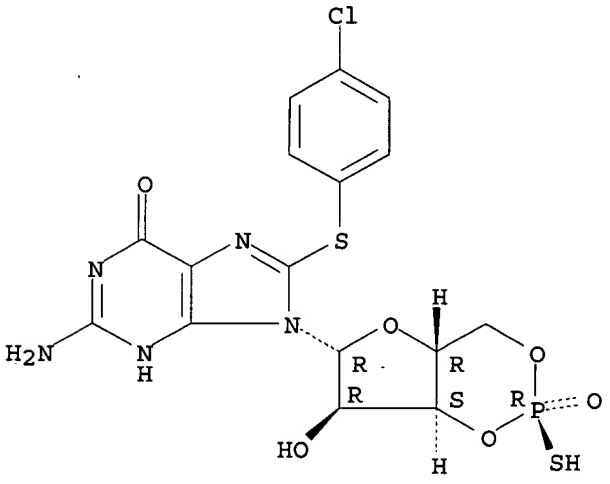
RN 160496-03-7 HCAPLUS
CN Guanosine, 8-[(4-chlorophenyl)thio]-, cyclic 3',5'-(hydrogen phosphorothioate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **153660-04-9**
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
((Rp)-8-pCPT-cGMPS as inhibitor of cGMP-dependent protein kinase)
RN 153660-04-9 HCAPLUS
CN Guanosine, 8-[(4-chlorophenyl)thio]-, cyclic 3',5'-[hydrogen (R)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.

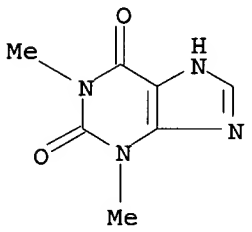


L63 ANSWER 38 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1994:524922 HCAPLUS
DOCUMENT NUMBER: 121:124922
TITLE: Theophylline suppresses human alveolar macrophage respiratory burst through phosphodiesterase inhibition
AUTHOR(S): Dent, Gordon; Giembycz, Mark A.; Rabe, Klaus F.; Wolf, Birgit; Barnes, Peter J.; Magnussen, Helgo
CORPORATE SOURCE: Zentr. Pneumolo. Thoraxchirugie, LVA Hamburg, Grosshansdorf, D-22927, Germany
SOURCE: American Journal of Respiratory Cell and Molecular

Biology (**1994**), 10(5), 565-72
CODEN: AJRBEL; ISSN: 1044-1549
DOCUMENT TYPE: Journal
LANGUAGE: English

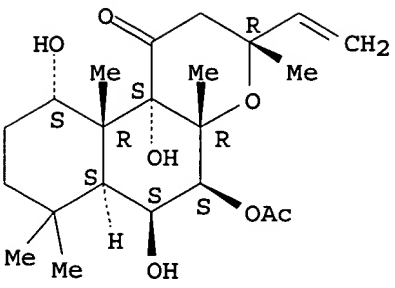
AB The effects of theophylline upon human alveolar macrophage function were assessed and compared with its action upon macrophage cyclic nucleotide phosphodisterase (PDE) activity and cyclic adenosine monophosphate (cAMP) levels. In the concentration range of 10 μmol/L to 1 mmol/L, theophylline caused a concentration-dependent inhibition of opsonized zymosan-stimulated hydrogen peroxide (H2O2) generation and PDE-catalyzed cAMP hydrolysis and increased the cellular cAMP content. Macrophage H2O2 generation was also inhibited by forskolin, an activator of adenylyl cyclase, but whereas theophylline (1 mmol/L) and forskolin (1 μmol/L) exhibited a synergic elevation of macrophage cAMP, there was no synergy between the two agents in the inhibition of respiratory burst. The inhibition of H2O2 generation by theophylline was reversed by the competitive inhibitor of cAMP-dependent protein kinase, (Rp)8-bromoadenosine cyclic 3':5'-monophosphorothioate (**Rp-8-Br-cAMPS**; 100 μmol/L), indicating that the functional effect of theophylline was mediated through the elevation of cAMP. The inhibition of H2O2 generation by theophylline was not affected by adenosine deaminase (0.1 U/mL), indicating that the inhibition did not involve adenosine antagonism. It is concluded that theophylline exerts a direct inhibitory action upon human alveolar macrophage function through the elevation of cAMP levels as a result of PDE inhibition, and that this effect is observed at concns. of theophylline that may be achieved in serum during therapy.

IT **58-55-9**, Theophylline, biological studies
RL: BIOL (Biological study)
(alveolar macrophage respiratory burst suppression by, phosphodiesterase inhibition in relation to)
RN 58-55-9 HCAPLUS
CN 1H-Purine-2,6-dione, 3,7-dihydro-1,3-dimethyl- (9CI) (CA INDEX NAME)



IT **66575-29-9**, Forskolin
RL: BIOL (Biological study)
(alveolar macrophage respiratory burst suppression by, theophylline comparison with)
RN 66575-29-9 HCAPLUS
CN 1H-Naphtho[2,1-b]pyran-1-one, 5-(acetyloxy)-3-ethenyldodecahydro-6,10,10b-trihydroxy-3,4a,7,7,10a-pentamethyl-, (3R,4aR,5S,6S,6aS,10S,10aR,10bS)-(9CI) (CA INDEX NAME)

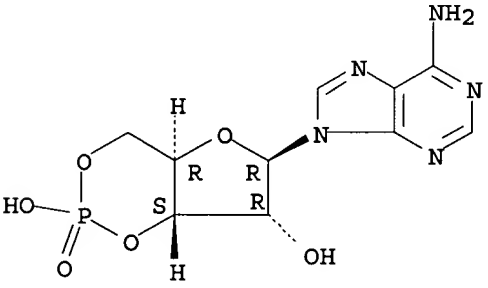
Absolute stereochemistry.



IT **50812-31-2**, Cyclic nucleotide phosphodiesterase
RL: BIOL (Biological study)
(inhibition of, by theophylline, alveolar macrophage respiratory burst suppression in relation to)
RN 50812-31-2 HCAPLUS
CN Phosphodiesterase, cyclic nucleotide (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **60-92-4**, CAMP
RL: BIOL (Biological study)
(theophylline increase of, alveolar macrophage respiratory burst suppression in relation to)
RN 60-92-4 HCAPLUS
CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



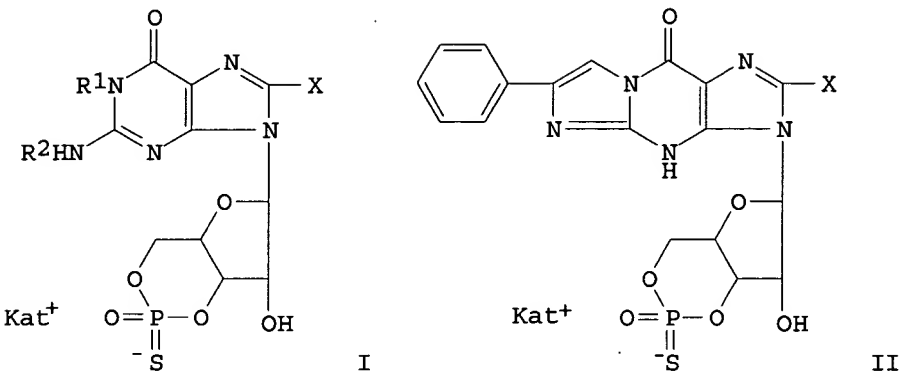
L63 ANSWER 39 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1994:192218 HCAPLUS
DOCUMENT NUMBER: 120:192218
TITLE: Preparation of cyclic guanosine 3o,5o-phosphorothioate derivatives for treatment of asthma, hypertension, thrombosis, and arteriosclerosis.
INVENTOR(S): Genieser, Hans Gottfried; Walter, Ulrich; Butt, Elke
PATENT ASSIGNEE(S): Germany
SOURCE: Ger. Offen., 9 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

DE 4217679	A1	19931202	DE 1992-4217679	19920526 <--
DE 4217679	C2	19980219		
US 5625056	A	19970429	US 1995-511664	19950807 <--
PRIORITY APPLN. INFO.:			DE 1992-4217679	A 19920526 <--
			US 1993-64555	B1 19930521 <--
			US 1995-430164	B2 19950427 <--

OTHER SOURCE(S): MARPAT 120:192218

GI



I II

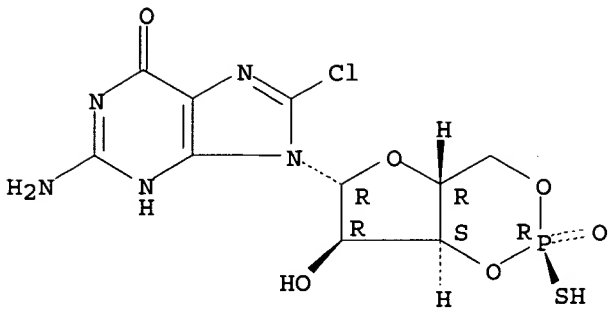
AB Title compds. I; II [R1, R2 = H; X = halo, NR3R4, SR4, OR4; R3 = H; R4 = alkyl, cycloalkyl, aralkyl, phenyl; or both R3 and R4 are alkyl; or R3R4 is part of a ring; or R1R2 = styrylene; Kat+ = H, physiol. compatible cation, trialkylammonium; with provisos] are prepared and purified. E.g., cyclothiophosphorylation of 8-bromoguanosine with PSCl3 in trialkyl phosphate according to a procedure reported by Genieser Et al. (Tetrahedron Lett., 1988) gave, besides the desired cyclic Rp- and Sp-8-bromoguanosine 3',5'-monophosphorothioate (Rp- and Sp-8-Br-cGMPS, resp.), the Rp- and Sp-8-Cl-cGMPS in the reaction mixture Chromatog. over Rp-18 reversed phase silica gel (eluant: 10% MeOH/100 mM triethylammonium formate buffer) and lyophilization of the product-containing fractions gave mixts. of Rp-8-Br/Cl-cGMPS and Sp-8-Br/Cl-cGMPS, which were then separated by preparative chromatog. over Rp-18 silica gel (eluant: 7% or 8% MeOH/100 mM triethylammonium formate buffer). The 8-Br-cGMPS diastereomers obtained via purification and lyophilization of the product-containing fractions were optionally further purified to give 6% Rp-8-Br-cGMPS (as the triethylammonium salt) of >98% purity. (containing only traces of the kinase-active Sp-8-Br/Cl-cGMPS and <0.05% of the normal cyclophosphate 8-Cl/Br-cGMP). The Sp-8-Br-cGMPS was also obtained as the triethylammonium salt with >98% purity in 5% yield. Rp-8-Br-cGMPS had a inhibition constant (Ki) of 4 μM against cGK.

IT **129162-40-9**
RL: RCT (Reactant); RACT (Reactant or reagent)
(arylsulfenylation of)

RN 129162-40-9 HCAPLUS

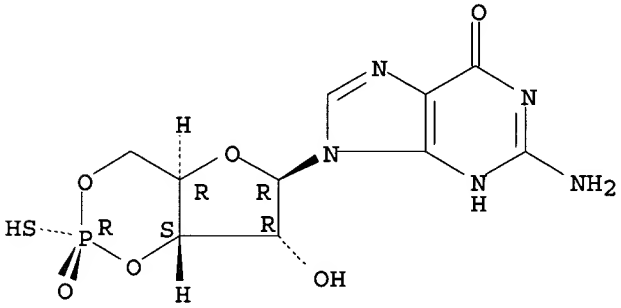
CN Guanosine, 8-chloro-, cyclic 3',5'-(hydrogen phosphorothioate), (R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



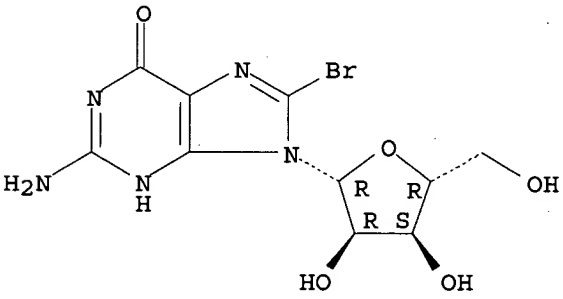
IT **86562-09-6**
RL: RCT (Reactant); RACT (Reactant or reagent)
(cyclization of, with 2-bromoactophenone)
RN 86562-09-6 HCAPLUS
CN Guanosine, cyclic 3',5'-[(R)-hydrogen phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **4016-63-1**
RL: RCT (Reactant); RACT (Reactant or reagent)
(cyclothiophosphorylation of)
RN 4016-63-1 HCAPLUS
CN Guanosine, 8-bromo- (7CI, 8CI, 9CI) (CA INDEX NAME)

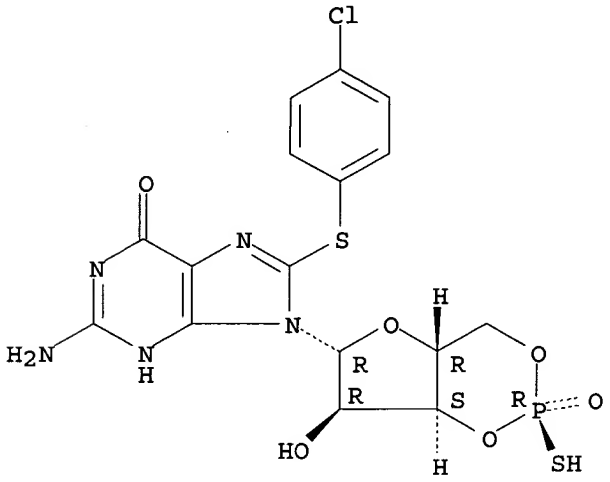
Absolute stereochemistry. Rotation (-).



IT **153660-04-9P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as cGK antagonist)

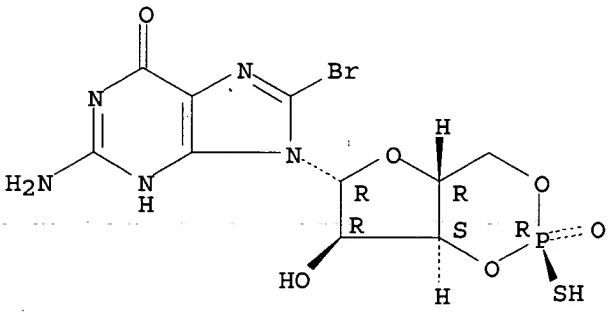
RN 153660-04-9 HCAPLUS
CN Guanosine, 8-[(4-chlorophenyl)thio]-, cyclic 3',5'-[hydrogen (R)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



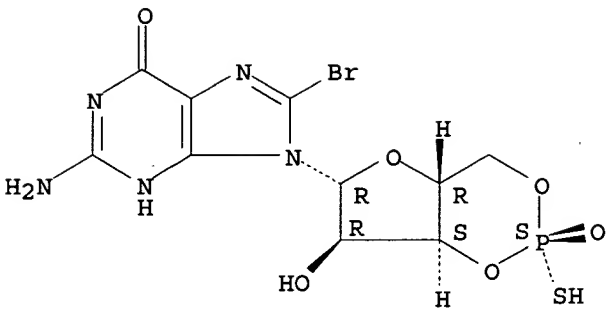
IT **150418-07-8P 153660-03-8P 153660-05-0P**
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of, as cardiovascular drug and antiasthmatic)
RN 150418-07-8 HCAPLUS
CN Guanosine, 8-bromo-, cyclic 3',5'-[hydrogen (R)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



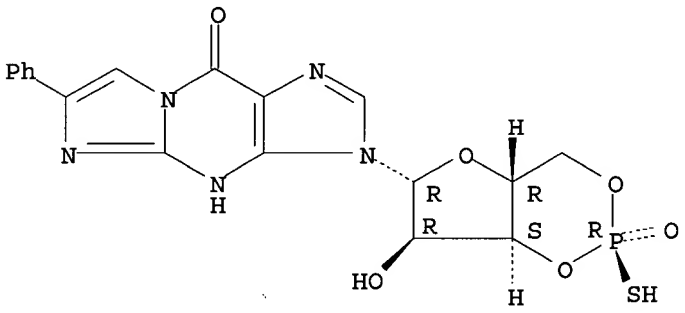
RN 153660-03-8 HCAPLUS
CN Guanosine, 8-bromo-, cyclic 3',5'-[hydrogen (S)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 153660-05-0 HCAPLUS
CN 9H-Imidazo[1,2-a]purin-9-one, 3,4-dihydro-3-[3,5-O-(mercaptophosphinylidene)-β-D-ribofuranosyl]-6-phenyl-, (R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L63 ANSWER 40 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1994:69593 HCAPLUS
DOCUMENT NUMBER: 120:69593
TITLE: Phosphorothioate derivatives of cyclic AMP analogs for inhibition of cell proliferation
INVENTOR(S): Jastorff, Bernd; Genieser, Hans Gottfried; Cho-Chung, Yoon Sang
PATENT ASSIGNEE(S): United States Dept. of Health and Human Services, USA
SOURCE: PCT Int. Appl., 79 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9321929	A1	19931111	WO 1993-US4093	19930430 <--
W: AU, CA, JP, KR				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
AU 9342266	A1	19931129	AU 1993-42266	19930430 <--
US 5843916	A	19981201	US 1994-225097	19940408 <--
PRIORITY APPLN. INFO.:			US 1992-877523 A	19920501 <--
			WO 1993-US4093 A	19930430 <--

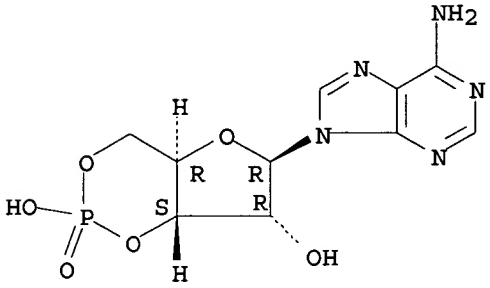
AB A method of inhibiting the proliferation of cells, particularly cancerous

cells, by contacting the cells with a phosphorothioate derivative of a cAMP modified at either or both of the C-6 and C-8 positions of the adenine moiety, and pharmaceutical compns. therefor are disclosed. At 50 μM, 8-chloro-, 8-methylthio-, and 8-bromo-cAMP phosphorothioate derivs. exhibited 40-75% growth inhibition of breast and colon cancer cell lines. Effects of combinations of compds. on growth inhibition were also studied.

IT **60-92-4D**, CAMP, phosphorothioates, modified at C-6 or C-8 position of adenosine **127634-20-2 142754-27-6 152218-15-0 152322-57-1 152322-58-2**
RL: BIOL (Biological study)
(cell proliferation inhibition with)

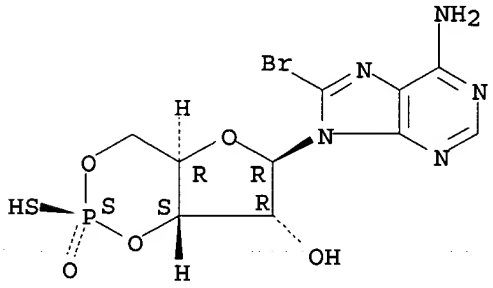
RN 60-92-4 HCAPLUS
CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



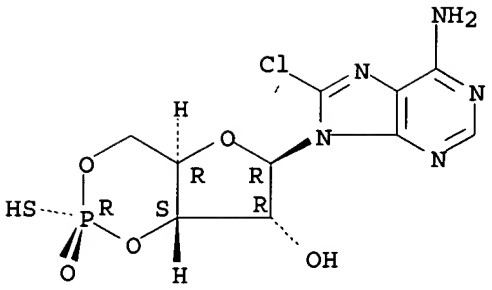
RN 127634-20-2 HCAPLUS
CN Adenosine, 8-bromo-, cyclic 3',5'-[hydrogen (S)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



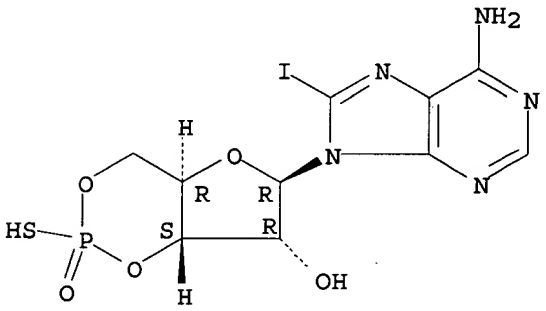
RN 142754-27-6 HCAPLUS
CN Adenosine, 8-chloro-, cyclic 3',5'-[hydrogen (R)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



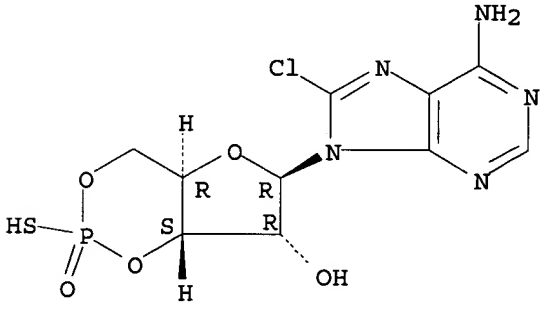
RN 152218-15-0 HCAPLUS
CN Adenosine, 8-iodo-, cyclic 3',5'-(hydrogen phosphorothioate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



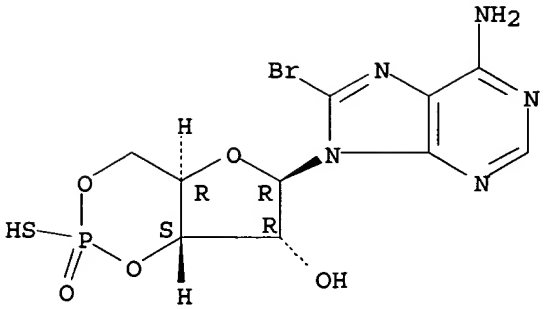
RN 152322-57-1 HCAPLUS
CN Adenosine, 8-chloro-, cyclic 3',5'-(hydrogen phosphorothioate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



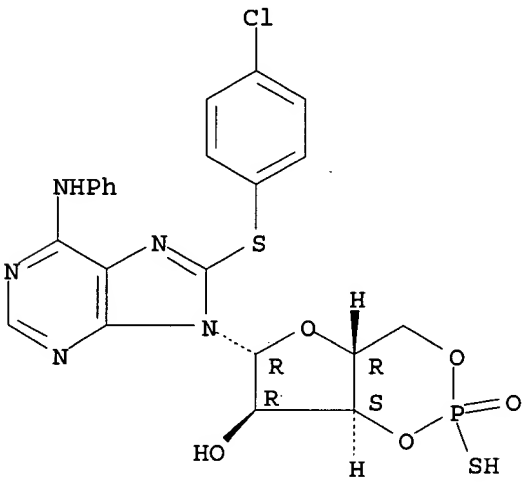
RN 152322-58-2 HCAPLUS
CN Adenosine, 8-bromo-, cyclic 3',5'-(hydrogen phosphorothioate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



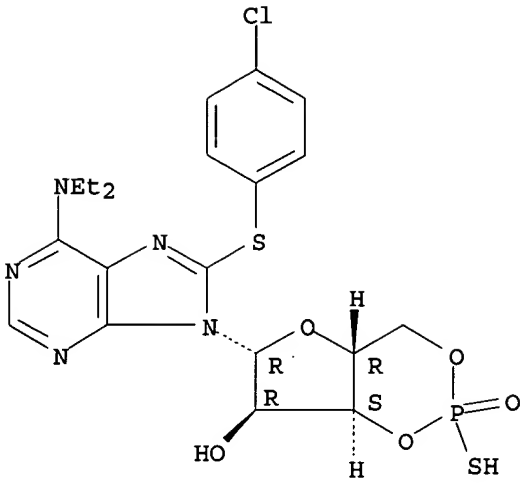
IT **152218-10-5 152218-11-6 152218-12-7**
152218-13-8 152218-14-9 152218-16-1
152218-17-2 152218-18-3 152218-19-4
152218-20-7 152218-21-8 152218-22-9
152218-23-0 152218-24-1 152218-25-2
152218-26-3 152322-59-3
RL: BIOL (Biological study)
(cell proliferation inhibition with chloro-cAMP and)
RN 152218-10-5 HCAPLUS
CN Adenosine, 8-[(4-chlorophenyl)thio]-N-phenyl-, cyclic 3',5'-(hydrogen phosphorothioate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



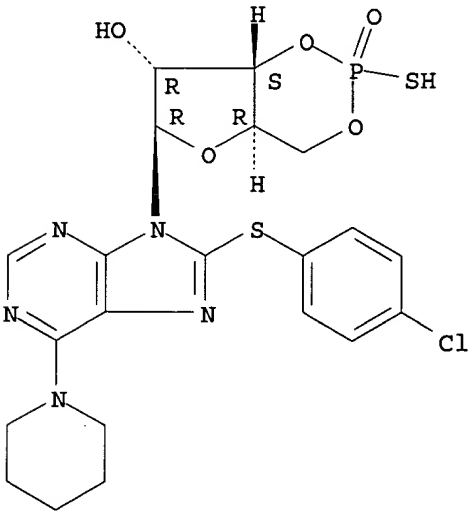
RN 152218-11-6 HCAPLUS
CN Adenosine, 8-[(4-chlorophenyl)thio]-N,N-diethyl-, cyclic 3',5'-(hydrogen phosphorothioate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



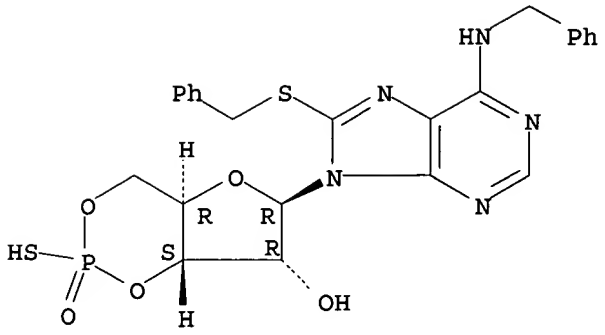
RN 152218-12-7 HCAPLUS
CN 9H-Purine, 8-[(4-chlorophenyl)thio]-9-[3,5-O-(mercaptophosphinylidene)-β-D-ribofuranosyl]-6-(1-piperidinyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



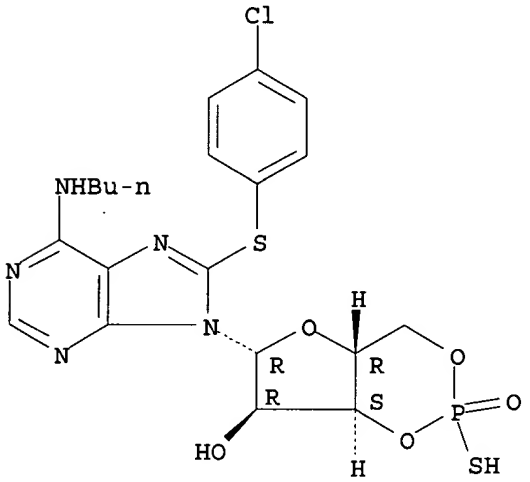
RN 152218-13-8 HCAPLUS
CN Adenosine, N-(phenylmethyl)-8-[(phenylmethyl)thio]-, cyclic 3',5'-(hydrogen phosphorothioate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



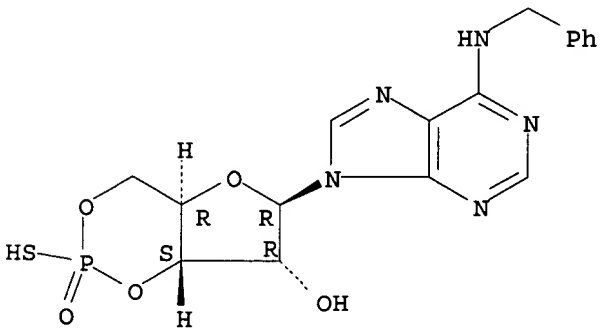
RN 152218-14-9 HCAPLUS
CN Adenosine, N-butyl-8-[(4-chlorophenyl)thio]-, cyclic 3',5'-(hydrogen phosphorothioate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



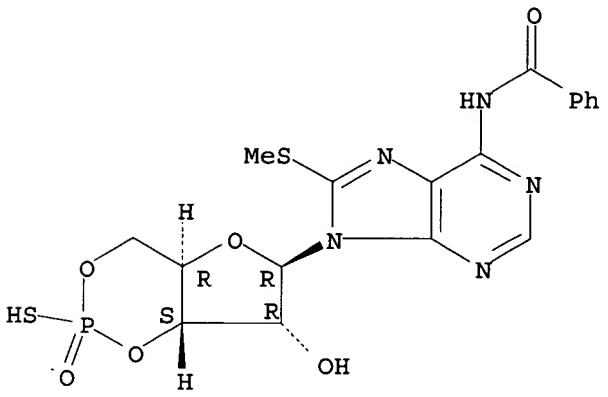
RN 152218-16-1 HCAPLUS
CN Adenosine, N-(phenylmethyl)-, cyclic 3',5'-(hydrogen phosphorothioate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



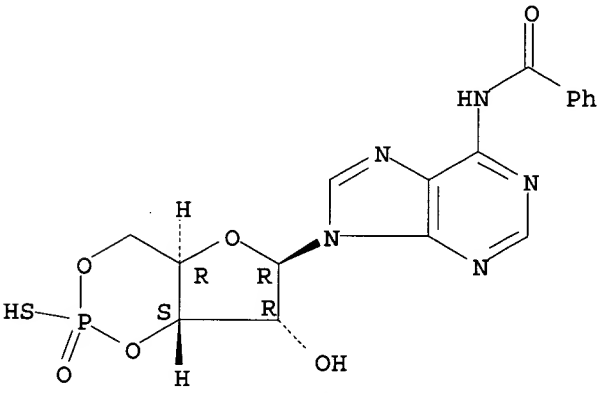
RN 152218-17-2 HCAPLUS
CN Adenosine, N-benzoyl-8-(methylthio)-, cyclic 3',5'-(hydrogen phosphorothioate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



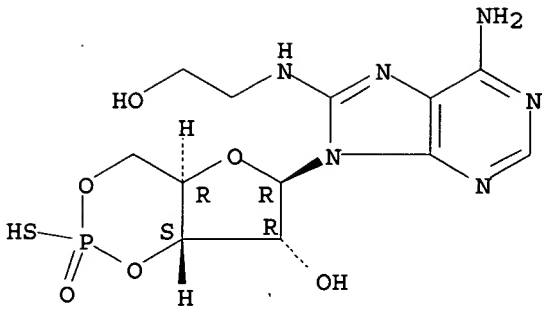
RN 152218-18-3 HCAPLUS
CN Adenosine, N-benzoyl-, cyclic 3',5'-(hydrogen phosphorothioate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



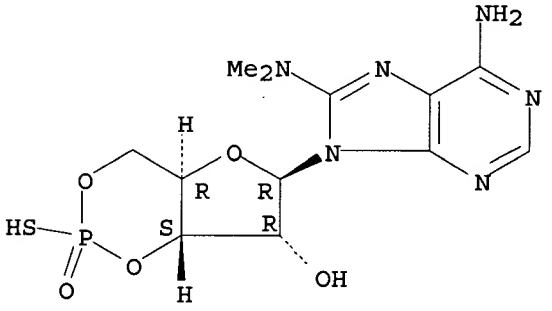
RN 152218-19-4 HCAPLUS
CN Adenosine, 8-[(2-hydroxyethyl)amino]-, cyclic 3',5'-(hydrogen phosphorothioate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



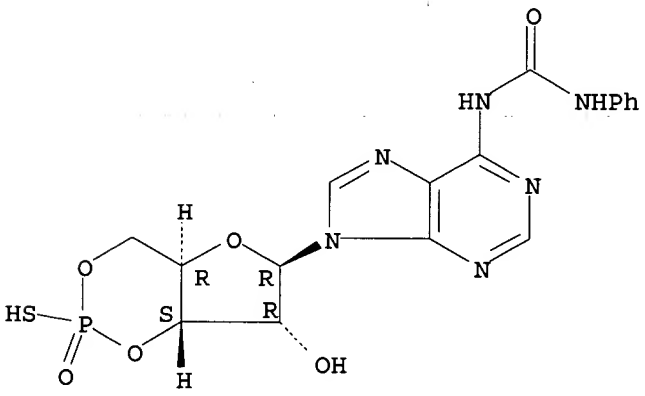
RN 152218-20-7 HCAPLUS
CN Adenosine, 8-(dimethylamino)-, cyclic 3',5'-(hydrogen phosphorothioate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



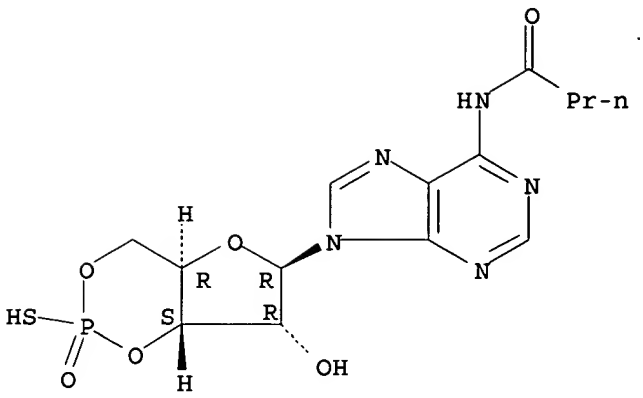
RN 152218-21-8 HCAPLUS
CN Adenosine, N-[(phenylamino)carbonyl]-, cyclic 3',5'-(hydrogen phosphorothioate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



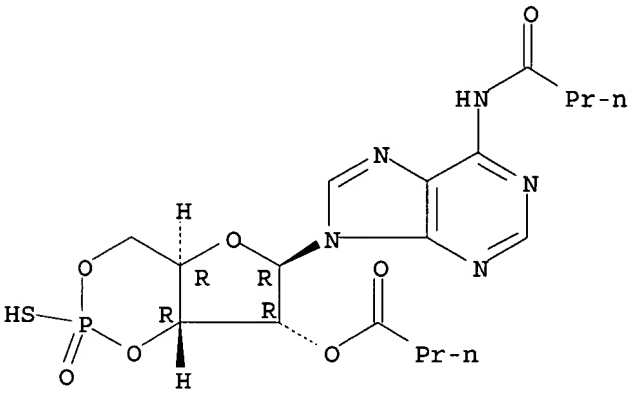
RN 152218-22-9 HCAPLUS
CN Adenosine, N-(1-oxobutyl)-, cyclic 3',5'-(hydrogen phosphorothioate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



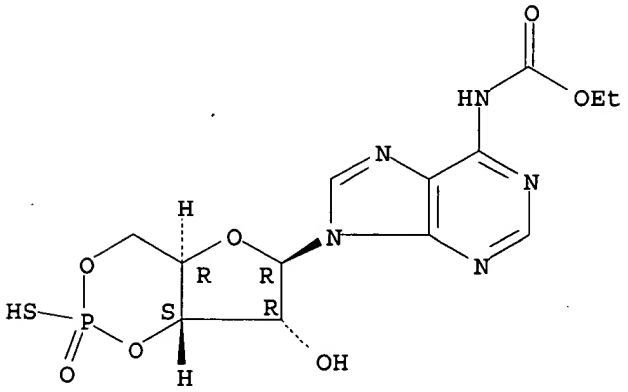
RN 152218-23-0 HCAPLUS
CN Adenosine, N-(1-oxobutyl)-, cyclic 3',5'-(hydrogen phosphorothioate) 2'-butanoate (9CI) (CA INDEX NAME)

Absolute stereochemistry.



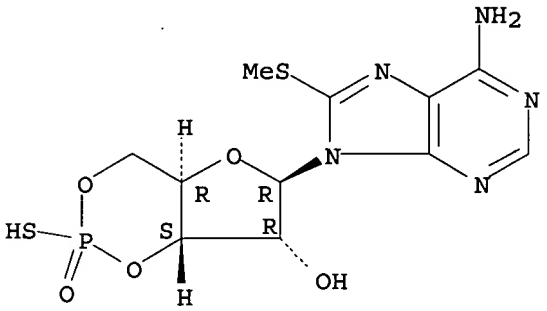
RN 152218-24-1 HCAPLUS
CN Adenosine, N-(ethoxycarbonyl)-, cyclic 3',5'-(hydrogen phosphorothioate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



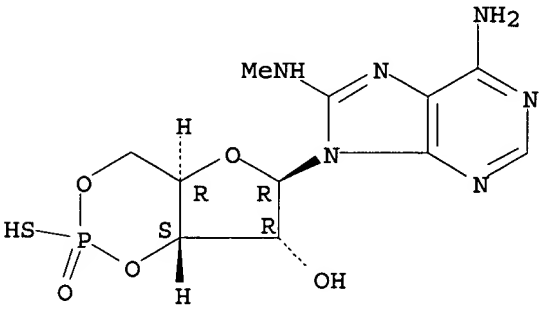
RN 152218-25-2 HCAPLUS
CN Adenosine, 8-(methylthio)-, cyclic 3',5'-(hydrogen phosphorothioate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



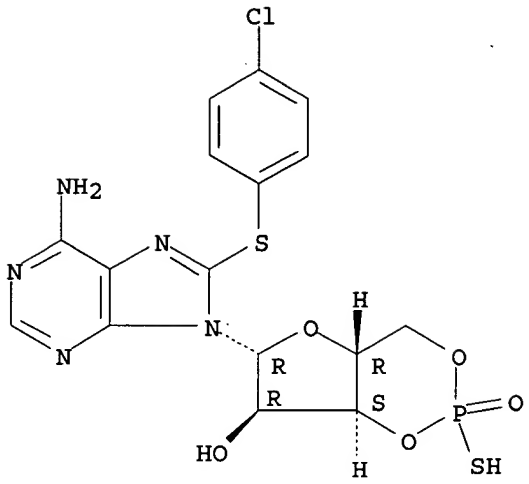
RN 152218-26-3 HCAPLUS
CN Adenosine, 8-(methylamino)-, cyclic 3',5'-(hydrogen phosphorothioate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 152322-59-3 HCAPLUS
CN Adenosine, 8-[(4-chlorophenyl)thio]-, cyclic 3',5'-(hydrogen phosphorothioate) (9CI) (CA INDEX NAME)

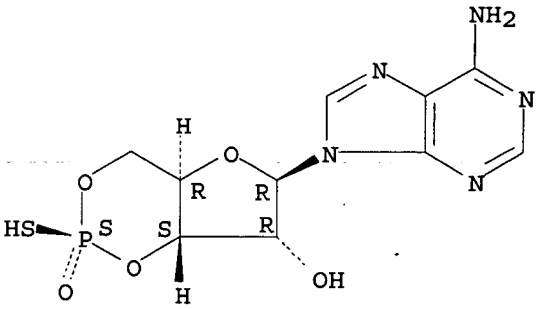
Absolute stereochemistry.



IT **9026-43-1**, Protein kinase
RL: PROC (Process)
(half-maximum activation of, with Sp-chloro-cAMP)
RN 9026-43-1 HCAPLUS
CN Kinase (phosphorylating), protein serine/threonine (9CI) (CA INDEX NAME)

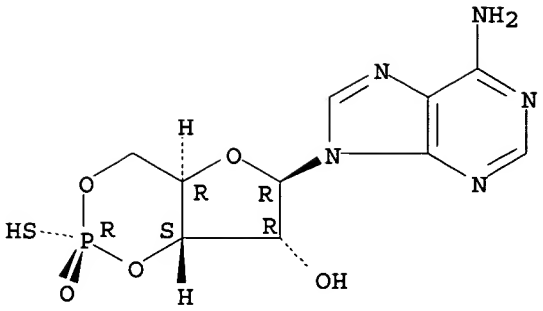
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **71774-13-5 73208-40-9 124854-63-3 142754-28-7**
RL: BIOL (Biological study)
(human colon carcinoma cells inhibition with)
RN 71774-13-5 HCAPLUS
CN Adenosine, cyclic 3',5'-[hydrogen (S)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



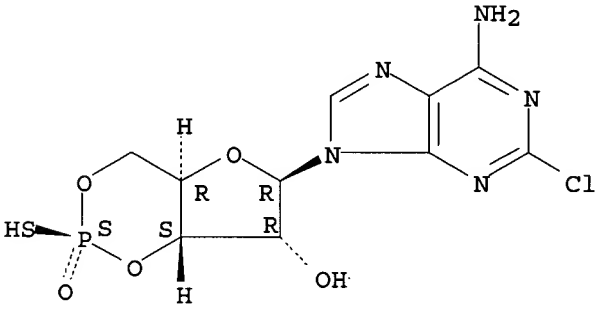
RN 73208-40-9 HCAPLUS
CN Adenosine, cyclic 3',5'-[hydrogen [P(R)]-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



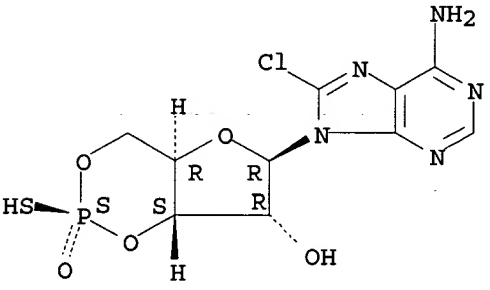
RN 124854-63-3 HCAPLUS
CN Adenosine, 2-chloro-, cyclic 3',5'-[(S)-hydrogen phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 142754-28-7 HCAPLUS
CN Adenosine, 8-chloro-, cyclic 3',5'-[hydrogen (S)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **142008-29-5**, CAMP-dependent protein kinase
RL: BIOL (Biological study)
(phosphorothioate derivs. of cAMP analogs as antagonists of)
RN 142008-29-5 HCAPLUS
CN Kinase (phosphorylating), protein, A (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L63 ANSWER 41 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN

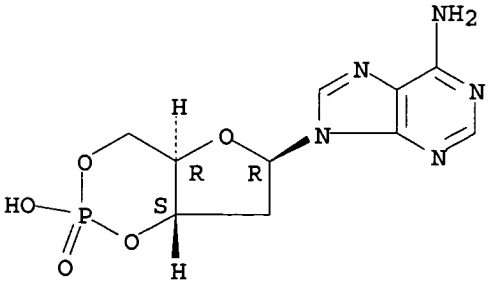
ACCESSION NUMBER: 1992:509701 HCAPLUS
DOCUMENT NUMBER: 117:109701
TITLE: Mapping of the epitope/paratope interactions of a monoclonal antibody directed against adenosine 3',5'-monophosphate
AUTHOR(S): Nass, Norbert; Colling, Christiane; Cramer, Matthias; Genieser, Hans Gottfried; Butt, Elke; Winkler, Elisabeth; Jaenicke, Lothar; Jastorff, Bernd
CORPORATE SOURCE: Inst. Biochem., Univ. Cologne, Cologne, D-5000/1, Germany
SOURCE: Biochemical Journal (**1992**), 285(1), 129-36
CODEN: BIJOAK; ISSN: 0306-3275
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A series of systematically modified cAMP analogs, including newly synthesized benzimidazole ribofuranosyl 3',5'-monophosphates was used to map the essential mol. interactions between cAMP and the monoclonal antibody 4/2C2 (mab 4/2C2) directed against 2'-O-succinoyl cAMP. Its paratope binds the purine base in syn conformation by dipole-dipole interactions and hydrophobic forces and/or stacking interactions. The ribose phosphate moiety is recognized by a combination of charge interactions and H-bonds to the exocyclic and the 5'-oxygen atoms and a hydrophobic interaction at the 2'-position. There is no regioselectivity for the exocyclic O atoms. Compared with the known types of binding, mab 4/2C2 thus shows a new combination of mol. interactions which may be the basis of its strikingly specific recognition and binding of the cyclic adenylates. On this account mab 4/2C2 may become an important tool in studies on cAMP metabolism

IT **1157-33-1 3545-76-4 7665-99-8**
13117-60-7 16719-36-1 23583-48-4
28048-42-2 29845-61-2 31319-73-0
31966-52-6 36940-87-1 39023-61-5
39023-62-6 40950-69-4 41941-56-4
41941-66-6 42467-66-3 53294-70-5
53303-84-7 54364-02-2 71122-68-4
71774-13-5 73208-40-9 76461-19-3
77836-30-7 86562-09-6 86562-10-9
127634-23-5 129693-10-3 129715-89-5
142754-27-6 142754-28-7 142754-29-8
142754-30-1 142754-31-2
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(monoclonal antibody binding to cAMP inhibition by, structure in)

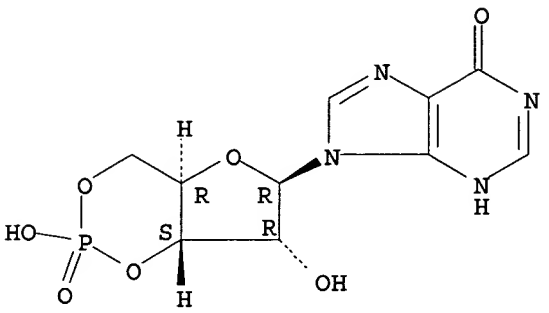
RN 1157-33-1 HCAPLUS
CN Adenosine, 2'-deoxy-, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



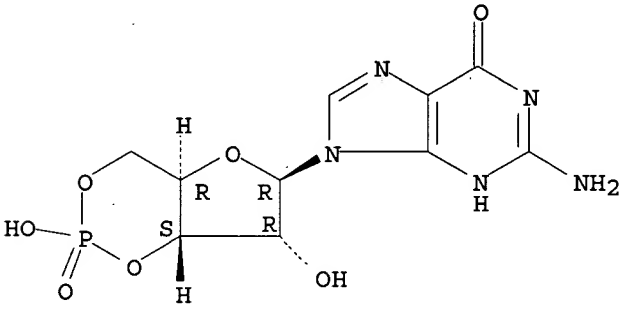
RN 3545-76-4 HCAPLUS
CN Inosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



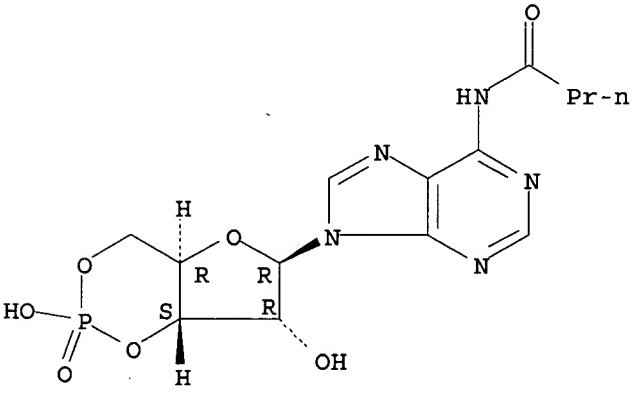
RN 7665-99-8 HCAPLUS
CN Guanosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 13117-60-7 HCAPLUS
CN Adenosine, N-(1-oxobutyl)-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

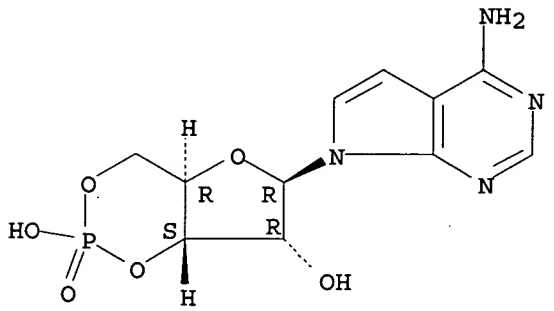
Absolute stereochemistry.



RN 16719-36-1 HCAPLUS

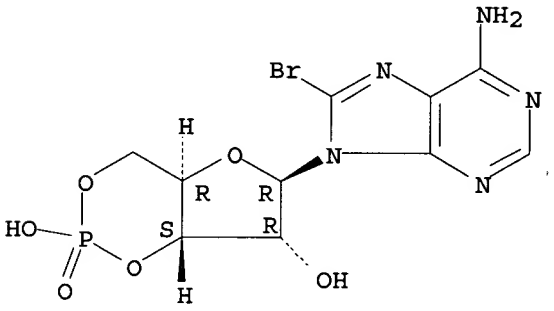
CN 7H-Pyrrolo[2,3-d]pyrimidin-4-amine, 7-(3,5-O-phosphinico-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



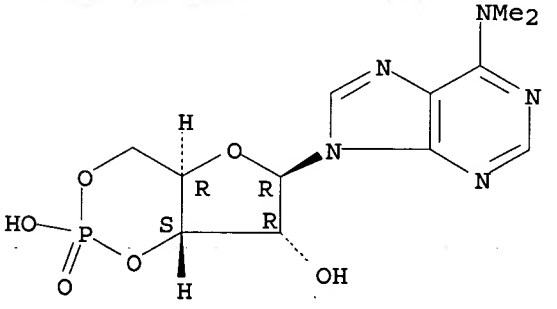
RN 23583-48-4 HCAPLUS
CN Adenosine, 8-bromo-, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



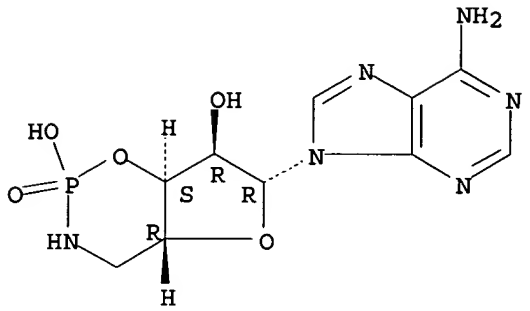
RN 28048-42-2 HCAPLUS
CN Adenosine, N,N-dimethyl-, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



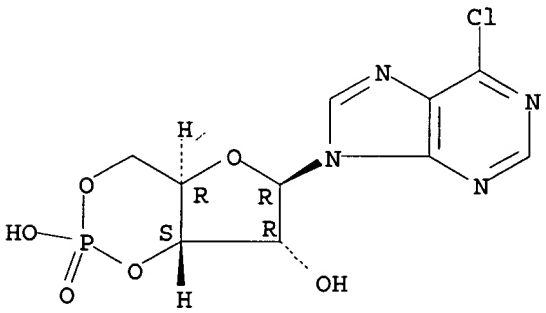
RN 29845-61-2 HCAPLUS
CN 2H-Furo[2,3-e]-1,3,2-oxazaphosphorin-7-ol, 6-(6-amino-9H-purin-9-yl)hexahydro-2-hydroxy-, 2-oxide, [4aR-(4aα,6β,7α,7a.beta.)]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



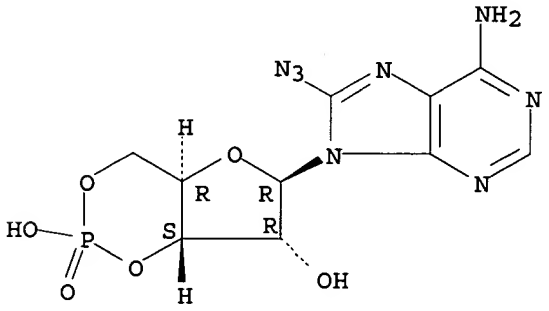
RN 31319-73-0 HCAPLUS
CN 9H-Purine, 6-chloro-9-(3,5-O-phosphinico-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



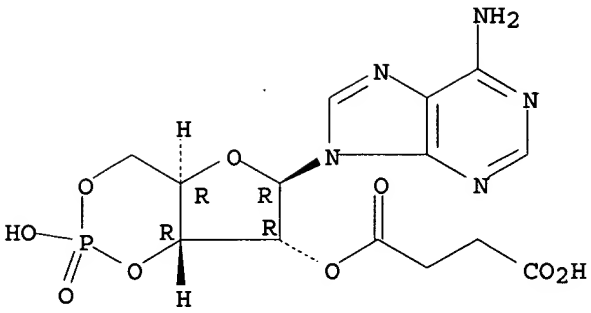
RN 31966-52-6 HCAPLUS
CN Adenosine, 8-azido-, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



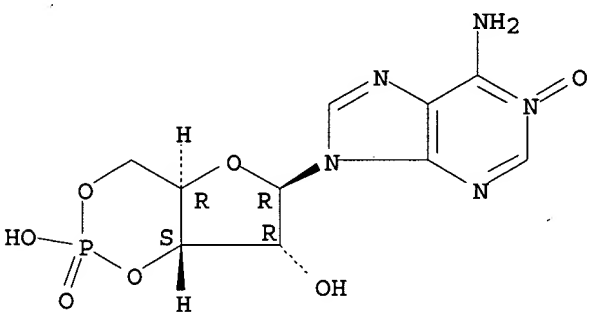
RN 36940-87-1 HCAPLUS
CN Adenosine, cyclic 3',5'-(hydrogen phosphate) 2'-(hydrogen butanedioate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



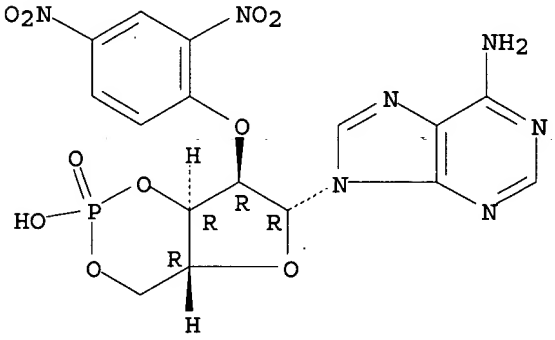
RN 39023-61-5 HCAPLUS
CN Adenosine, cyclic 3',5'-(hydrogen phosphate), 1-oxide (9CI) (CA INDEX NAME)

Absolute stereochemistry.



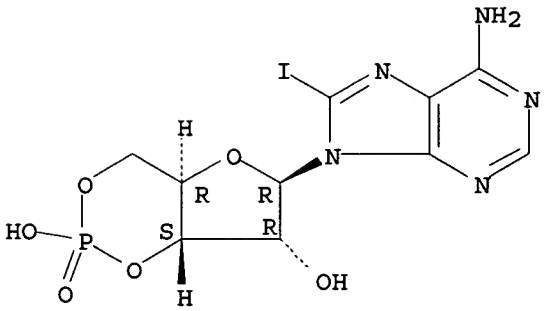
RN 39023-62-6 HCAPLUS
CN Adenosine, 2'-O-(2,4-dinitrophenyl)-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



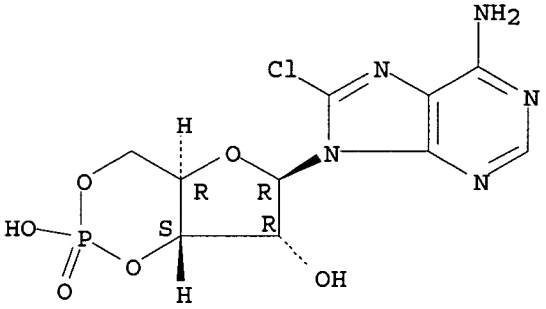
RN 40950-69-4 HCAPLUS
CN Adenosine, 8-iodo-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



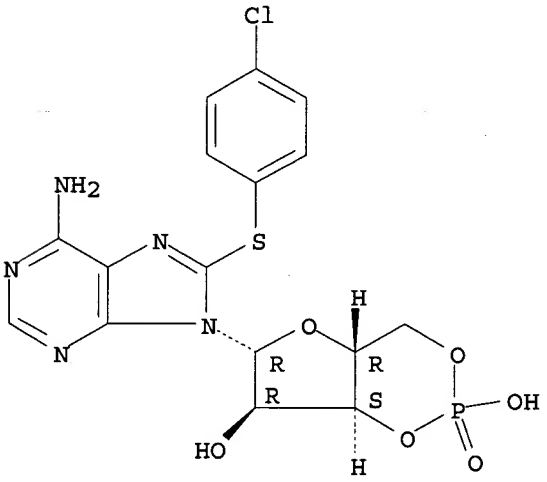
RN 41941-56-4 HCAPLUS
CN Adenosine, 8-chloro-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 41941-66-6 HCAPLUS
CN Adenosine, 8-[(4-chlorophenyl)thio]-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

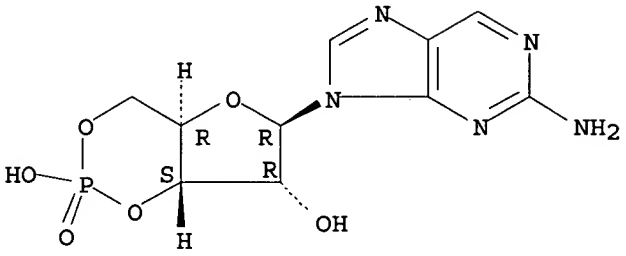
Absolute stereochemistry.



RN 42467-66-3 HCAPLUS
CN 9H-Purin-2-amine, 9-(3,5-O-phosphinico-β-D-ribofuranosyl)- (9CI) (CA

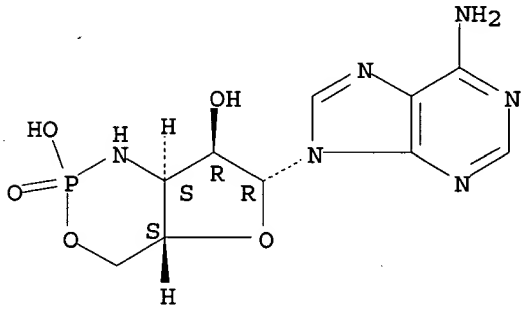
INDEX NAME)

Absolute stereochemistry.



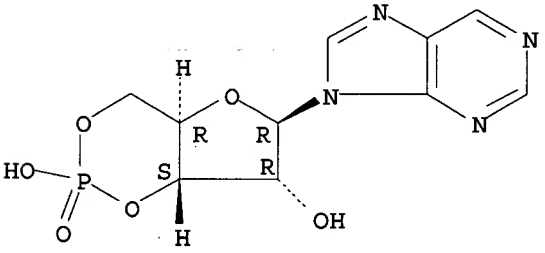
RN 53294-70-5 HCAPLUS
CN 2H-Furo[3,2-d][1,3,2]oxazaphosphorin-7-ol, 6-(6-amino-9H-purin-9-yl)hexahydro-2-hydroxy-, 2-oxide, [4aS-(4aα,6β,7α,7a.beta.)]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



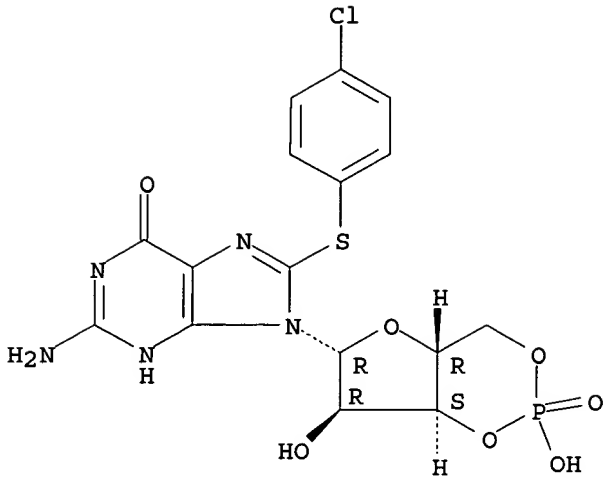
RN 53303-84-7 HCAPLUS
CN 9H-Purine, 9-(3,5-O-phosphinico-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



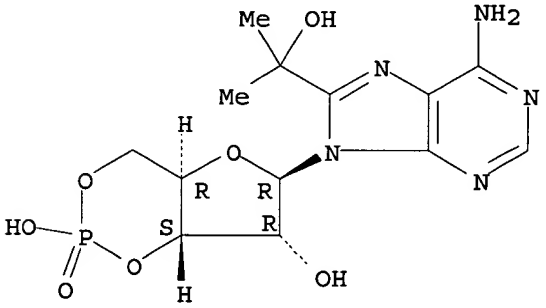
RN 54364-02-2 HCAPLUS
CN Guanosine, 8-[(4-chlorophenyl)thio]-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



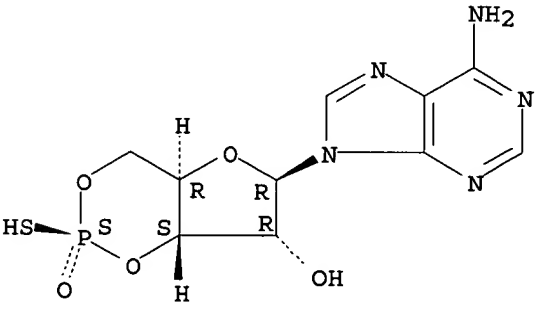
RN 71122-68-4 HCAPLUS
CN Adenosine, 8-(1-hydroxy-1-methylethyl)-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 71774-13-5 HCAPLUS
CN Adenosine, cyclic 3',5'-[hydrogen (S)-phosphorothioate] (9CI) (CA INDEX NAME)

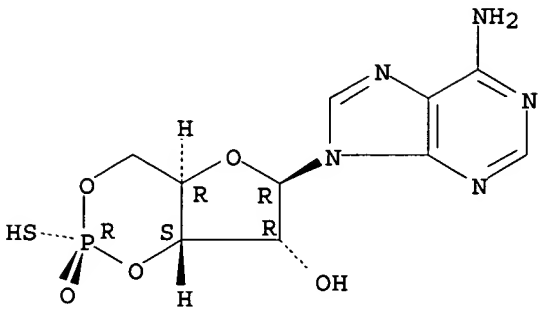
Absolute stereochemistry.



RN 73208-40-9 HCAPLUS
CN Adenosine, cyclic 3',5'-[hydrogen [P(R)]-phosphorothioate] (9CI) (CA

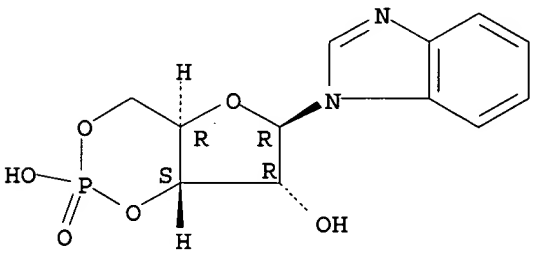
INDEX NAME)

Absolute stereochemistry.



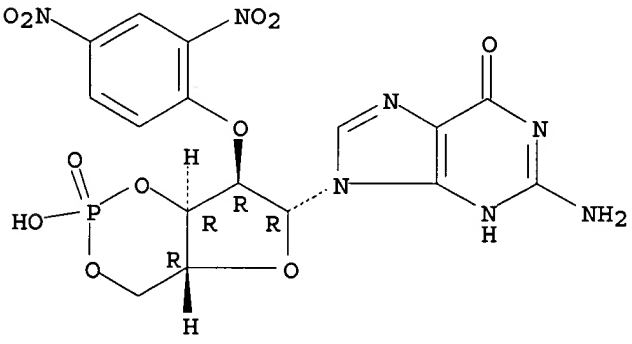
RN 76461-19-3 HCAPLUS
CN 1H-Benzimidazole, 1-(3,5-O-phosphinico-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



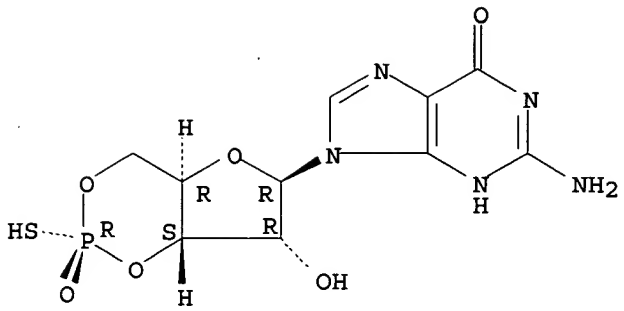
RN 77836-30-7 HCAPLUS
CN Guanosine, 2'-O-(2,4-dinitrophenyl)-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



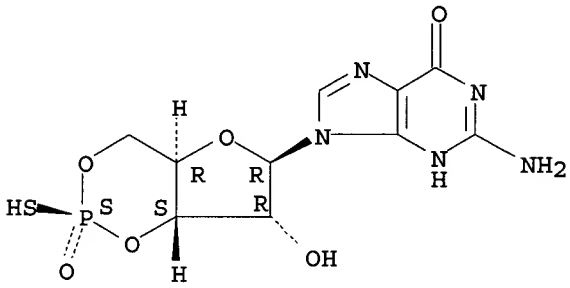
RN 86562-09-6 HCAPLUS
CN Guanosine, cyclic 3',5'-[(R)-hydrogen phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



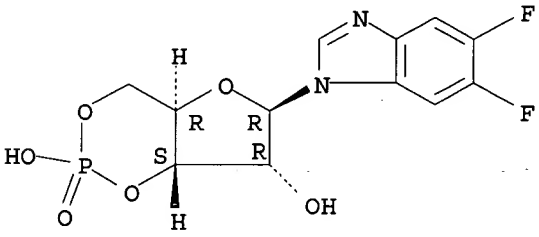
RN 86562-10-9 HCAPLUS
CN Guanosine, cyclic 3',5'-[(S)-hydrogen phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



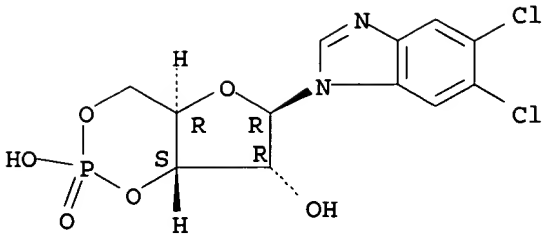
RN 127634-23-5 HCAPLUS
CN 1H-Benzimidazole, 5,6-difluoro-1-(3,5-O-phosphinico-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



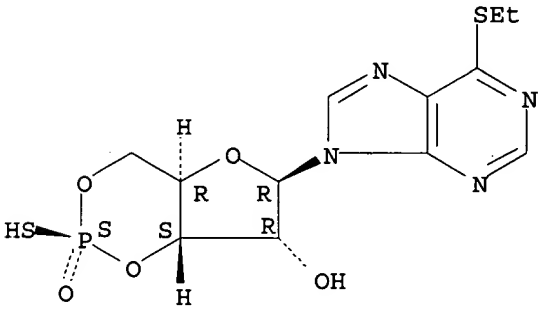
RN 129693-10-3 HCAPLUS
CN 1H-Benzimidazole, 5,6-dichloro-1-(3,5-O-phosphinico-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



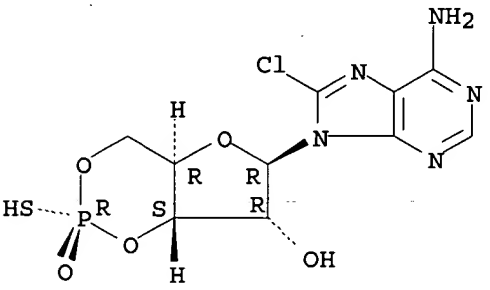
RN 129715-89-5 HCAPLUS
CN Inosine, 6-S-ethyl-6-thio-, cyclic 3',5'-(hydrogen phosphorothioate), (S)-(9CI) (CA INDEX NAME)

Absolute stereochemistry.



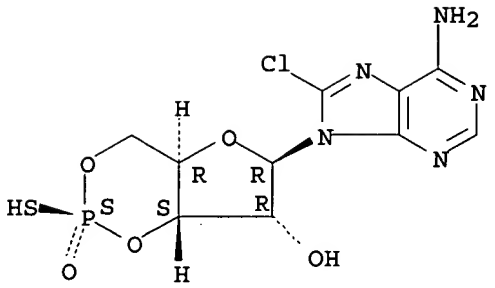
RN 142754-27-6 HCAPLUS
CN Adenosine, 8-chloro-, cyclic 3',5'-[hydrogen (R)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



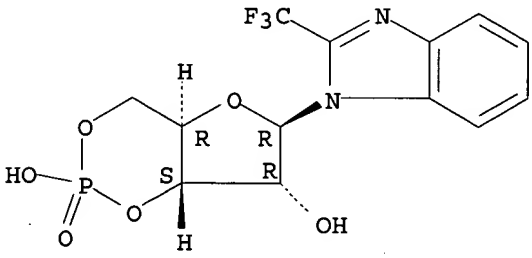
RN 142754-28-7 HCAPLUS
CN Adenosine, 8-chloro-, cyclic 3',5'-[hydrogen (S)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



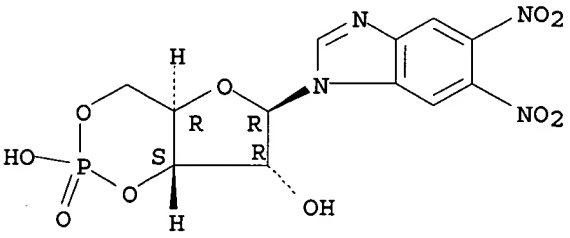
RN 142754-29-8 HCAPLUS
CN 1H-Benzimidazole, 1-(3,5-O-phosphinico-β-D-ribofuranosyl)-2-(trifluoromethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



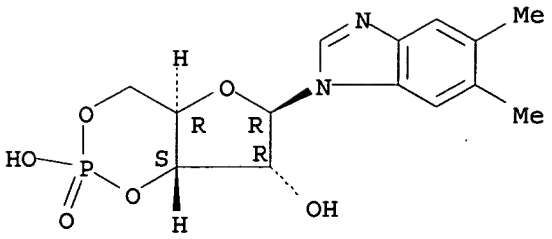
RN 142754-30-1 HCAPLUS
CN 1H-Benzimidazole, 5,6-dinitro-1-(3,5-O-phosphinico-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



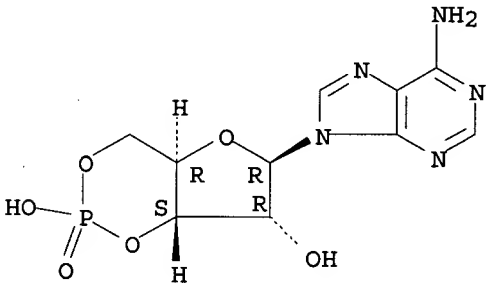
RN 142754-31-2 HCAPLUS
CN 1H-Benzimidazole, 5,6-dimethyl-1-(3,5-O-phosphinico-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **60-92-4**, Cyclic AMP
RL: PRP (Properties)
(monoclonal antibody interaction with, structure in)
RN 60-92-4 HCAPLUS
CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



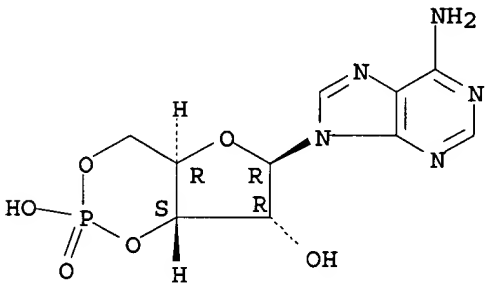
L63 ANSWER 42 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1992:503568 HCAPLUS
DOCUMENT NUMBER: 117:103568
TITLE: Unhydrolyzable analogs of adenosine 3':5'-monophosphate demonstrating growth inhibition and differentiation in human cancer cells
AUTHOR(S): Yokozaki, Hiroshi; Tortora, Giampaolo; Pepe, Stefano; Maronde, Erik; Genieser, Hans Gottfried; Jastorff, Bernd; Cho-Chung, Yoon S.
CORPORATE SOURCE: Lab. Tumor Immunol. Biol., Natl. Cancer Inst., Bethesda, MD, 20892, USA
SOURCE: Cancer Research (**1992**), 52(9), 2504-8
CODEN: CNREA8; ISSN: 0008-5472
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A set of adenosine 3':5'-monophosphate (cAMP) analogs that combine exocyclic sulfur substitutions in the equatorial (Rp) or the axial (Sp) position of the cyclophosphate ring with modifications in the adenine base of cAMP were tested for their effect on the growth of HL-60 human promyelocytic leukemia cells and LS-174T human colon carcinoma cells. Both diastereomers of the phosphorothioate derivs. were growth inhibitory, exhibiting a concentration inhibiting 50% of cell proliferation of 3-100 μM. Among the analogs tested, **Rp-8-Cl-cAMPS** and Sp-8-Br-cAMPS were the two most potent. **Rp-8-Cl-cAMPS** was 5- to 10-fold less potent than 8-Cl-cAMP while Sp-8-Br-cAMPS was approx. 6-fold more potent than 8-Br-cAMP. The growth inhibition was not due to a block in a specific phase of the cell cycle or due to cytotoxicity. **Rp-8-**

Cl-cAMPS enhanced its growth-inhibitory effect when added together with 8-Cl-cAMP and increased differentiation in combination with N6-benzyl-cAMP. The binding kinetics data showed that these Sp and Rp modifications brought about a greater decrease in affinity for Site B than for Site A of RI (the regulatory subunit of type I cAMP-dependent protein kinase) and a substantial decrease of affinity for Site A or RII (the regulatory subunit of type II protein kinase) but only a small decrease in affinity for Site B of RII, indicating the importance of the Site B binding of RII in the growth-inhibitory effect. These results show that the phosphorothioate analogs of cAMP are useful tools to investigate the mechanism of action of cAMP in growth control and differentiation and may have practical implication in the suppression of malignancy.

IT **142008-29-5**
RL: BIOL (Biological study)
(I and II, RI and RII regulatory subunits of, binding of unhydrolyzable analogs of cAMP to, growth inhibition and differentiation induction activity of, in human cancer cells, structure in relation to)
RN 142008-29-5 HCAPLUS
CN Kinase (phosphorylating), protein, A (9CI) (CA INDEX NAME)

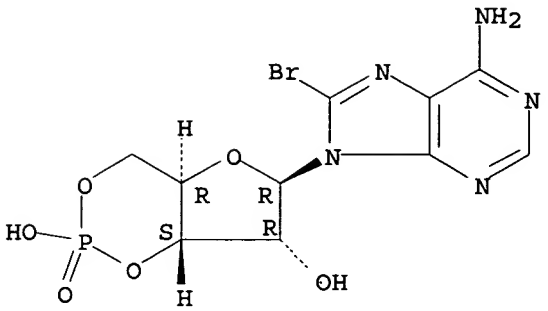
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **60-92-4D**, Cyclic AMP, analogs **23583-48-4**
32115-08-5 41941-56-4 71774-13-5
73208-40-9 124854-63-3 127634-20-2
142754-27-6 142754-28-7
RL: BIOL (Biological study)
(growth inhibition and differentiation inducing activity of, in human cancer cells, structure in relation to)
RN 60-92-4 HCAPLUS
CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



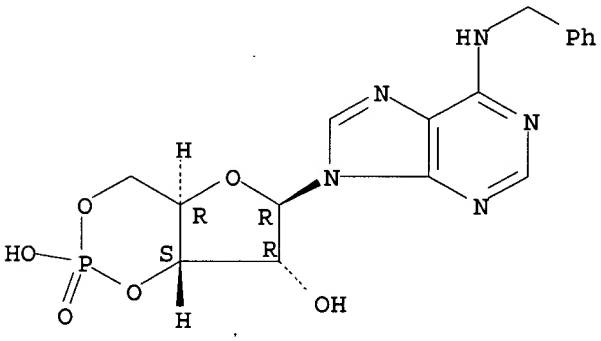
RN 23583-48-4 HCAPLUS
CN Adenosine, 8-bromo-, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



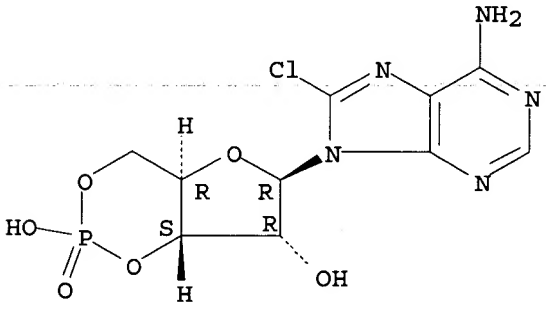
RN 32115-08-5 HCAPLUS
CN Adenosine, N-(phenylmethyl)-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



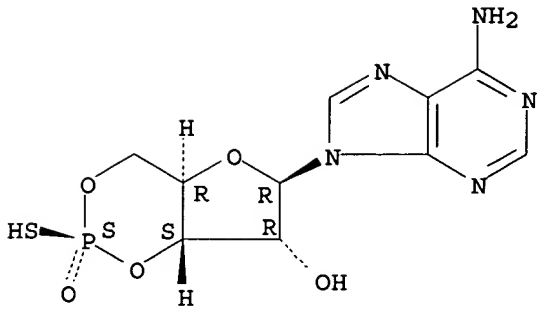
RN 41941-56-4 HCAPLUS
CN Adenosine, 8-chloro-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



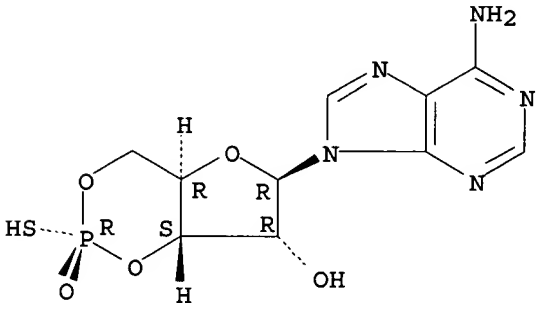
RN 71774-13-5 HCAPLUS
CN Adenosine, cyclic 3',5'-[hydrogen (S)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



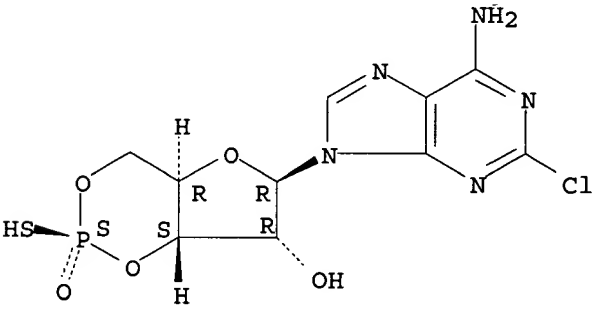
RN 73208-40-9 HCAPLUS
CN Adenosine, cyclic 3',5'-[hydrogen [P(R)]-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



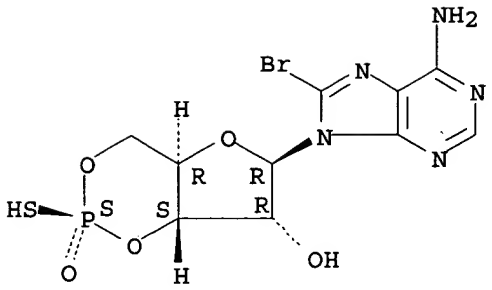
RN 124854-63-3 HCAPLUS
CN Adenosine, 2-chloro-, cyclic 3',5'-[(S)-hydrogen phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



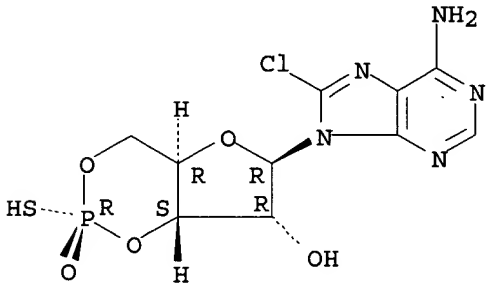
RN 127634-20-2 HCAPLUS
CN Adenosine, 8-bromo-, cyclic 3',5'-[hydrogen (S)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



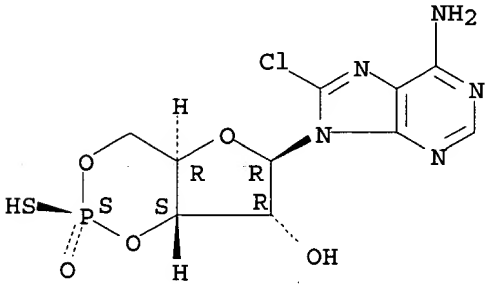
RN 142754-27-6 HCAPLUS
CN Adenosine, 8-chloro-, cyclic 3',5'-[hydrogen (R)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 142754-28-7 HCAPLUS
CN Adenosine, 8-chloro-, cyclic 3',5'-[hydrogen (S)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L63 ANSWER 43 OF 43 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1990:547947 HCAPLUS
DOCUMENT NUMBER: 113:147947
TITLE: Probing the cyclic nucleotide binding sites of cAMP-dependent protein kinases I and II with analogs of adenosine 3',5'-cyclic phosphorothioates
AUTHOR(S): Dostmann, Wolfgang R. G.; Taylor, Susan S.; Genieser, Hans Gottfried; Jastorff, Bernd; Doeskeland, Stein Ove; Oegreid, Dagfinn
CORPORATE SOURCE: Dep. Chem., Univ. California, San Diego, La Jolla, CA,

92093, USA
SOURCE: Journal of Biological Chemistry (1990), 265(18), 10484-91
CODEN: JBCHA3; ISSN: 0021-9258
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A set of cAMP analogs were synthesized that combined exocyclic S substitutions in the equatorial (Rp) or the axial (Sp) position of the cyclophosphate ring with modifications in the adenine base of cAMP. The potency of these compds. to inhibit the binding of [3H]cAMP to sites A and B from type I (rabbit skeletal muscle) and type II (bovine myocardium) cAMP-dependent protein kinase was determined quant. On the average, the Sp isomers had a 5-fold lower affinity for site A and a 30-fold lower affinity for site B of isoenzyme I than their cyclophosphate homolog. The mean reduction in affinities for the equivalent sites of isoenzyme II were 20- and 4-fold, resp. The Rp isomers showed a decrease in affinity of .apprx.400- and .apprx.200-fold for sites A and B, resp., of isoenzyme I, against 200- and 45-fold for sites A and B of isoenzyme II. The Sp substitutions therefore increased the relative preference for site A of isoenzyme I and site B of isoenzyme II. The Rp substitutions, on the other hand, increased the relative preference for site B of both isoenzymes. These data showed that the Rp and Sp substitutions are tolerated differently by the 2 intrachain sites of isoenzymes I and II. They also support the hypothesis that it is the axial, and not the previously proposed equatorial O atom that contributes the neg. charge for the ionic interaction with an invariant arginine in all 4 binding sites. In addition, they demonstrate that combined modifications in the adenine ring and the cyclic phosphate ring of cAMP can enhance the ability to discriminate between site A and B of 1 isoenzyme as well as to discriminate between isoenzyme I and II. Since Rp analogs of cAMP are known to inhibit activation of cAMP-dependent protein kinases, the findings of the present study have implications for the synthesis of analogs having a very high selectivity for isoenzyme I or II.

IT **9026-43-1**, Protein kinase
RL: BIOL (Biological study)
(cAMP-dependent, I and II, cAMP-binding sites A and B of, adenosine cyclic phosphorothioate analogs differential affinities for)

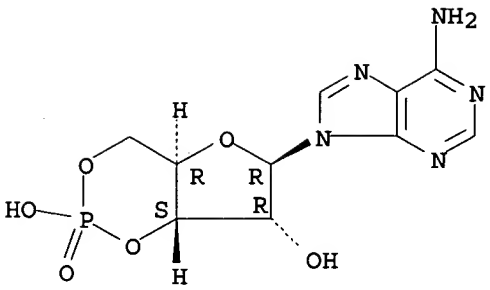
RN 9026-43-1 HCAPLUS
CN Kinase (phosphorylating), protein serine/threonine (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT **60-92-4 3545-76-4**, Inosine 3',5'-cyclic monophosphate
23583-48-4, 8-Bromoadenosine 3',5'-cyclic monophosphate
28048-42-2 31319-73-0 38183-21-0
39023-65-9 41941-66-6 53303-84-7
71774-13-5 73208-40-9 100343-91-7
100343-92-8 120912-54-1 120912-55-2
124844-90-2 124844-91-3 124844-92-4
124854-63-3 127634-20-2 129693-10-3
129693-11-4 129693-12-5 129693-13-6
129693-14-7 129693-15-8 129693-16-9
129693-17-0 129693-18-1 129715-89-5
129734-99-2 129735-00-8 129735-01-9
RL: BIOL (Biological study)
(protein kinases I and II cAMP-dependent binding sites A and B differential binding affinity for)

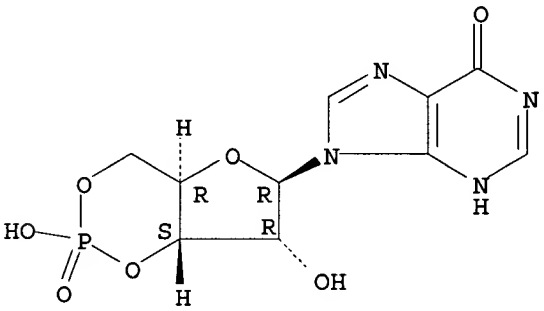
RN 60-92-4 HCAPLUS
CN Adenosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



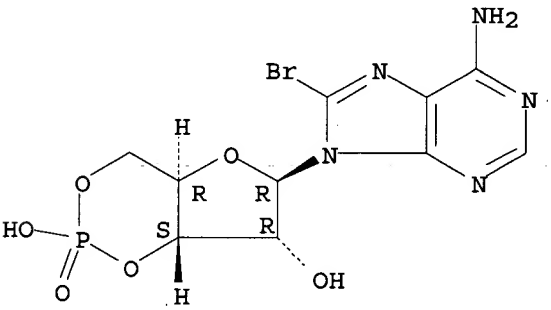
RN 3545-76-4 HCAPLUS
CN Inosine, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



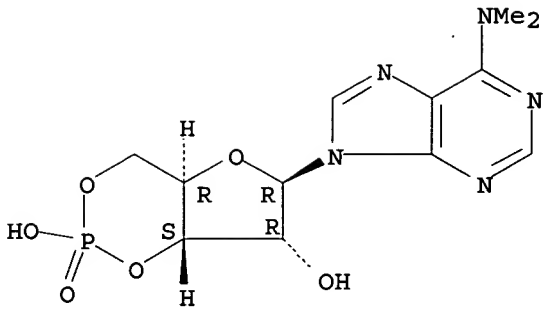
RN 23583-48-4 HCAPLUS
CN Adenosine, 8-bromo-, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



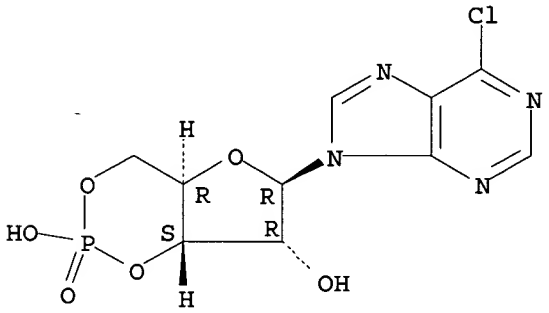
RN 28048-42-2 HCAPLUS
CN Adenosine, N,N-dimethyl-, cyclic 3',5'-(hydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



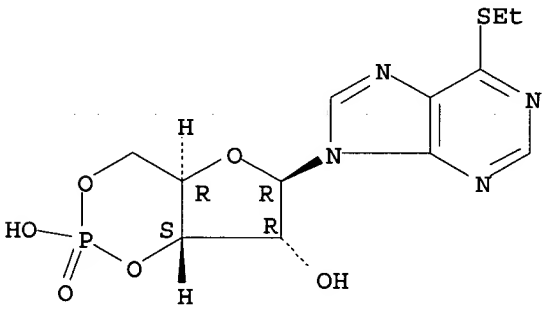
RN 31319-73-0 HCAPLUS
CN 9H-Purine, 6-chloro-9-(3,5-O-phosphinico-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



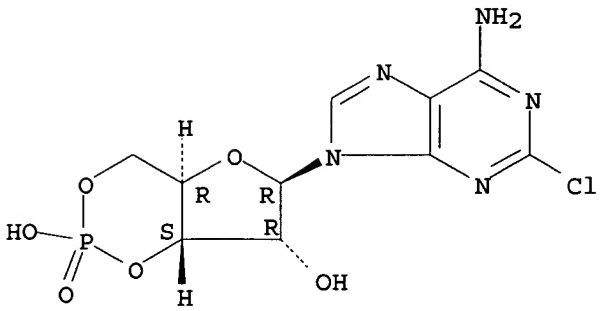
RN 38183-21-0 HCAPLUS
CN 9H-Purine, 6-(ethylthio)-9-(3,5-O-phosphinico-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



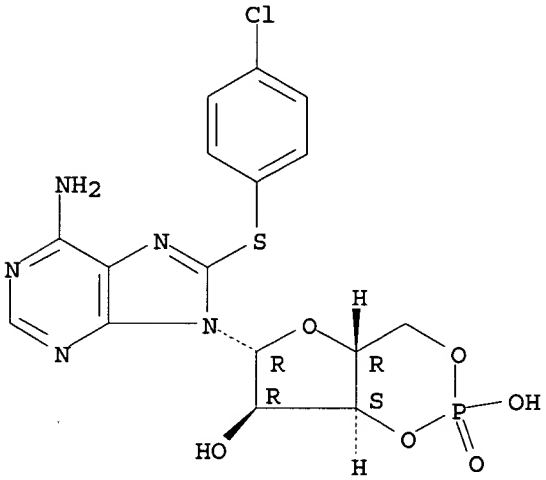
RN 39023-65-9 HCAPLUS
CN Adenosine, 2-chloro-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



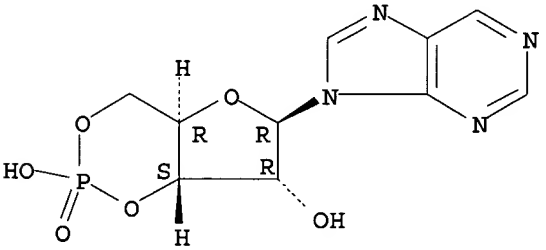
RN 41941-66-6 HCAPLUS
CN Adenosine, 8-[(4-chlorophenyl)thio]-, cyclic 3',5'-(hydrogen phosphate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



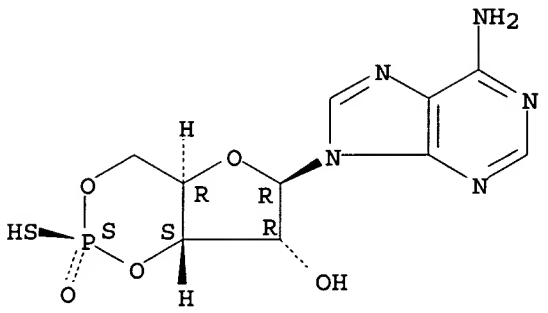
RN 53303-84-7 HCAPLUS
CN 9H-Purine, 9-(3,5-O-phosphinico-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



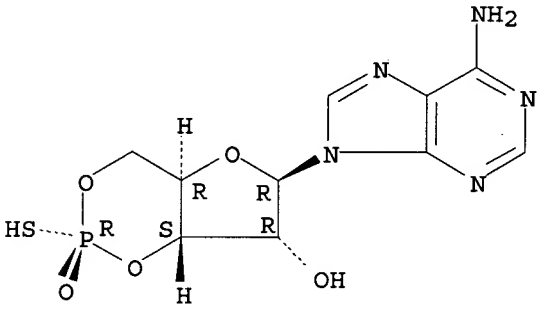
RN 71774-13-5 HCAPLUS
CN Adenosine, cyclic 3',5'-[hydrogen (S)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



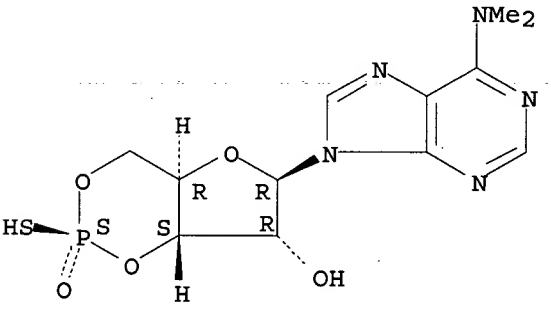
RN 73208-40-9 HCAPLUS
CN Adenosine, cyclic 3',5'-[hydrogen [P(R)]-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



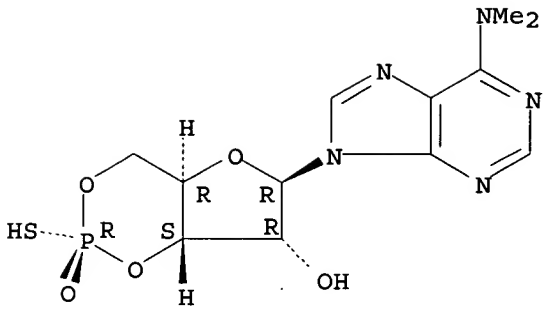
RN 100343-91-7 HCAPLUS
CN Adenosine, N,N-dimethyl-, cyclic 3',5'-(hydrogen phosphorothioate), (S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



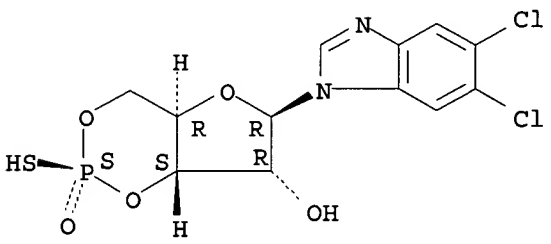
RN 100343-92-8 HCAPLUS
CN Adenosine, N,N-dimethyl-, cyclic 3',5'-(hydrogen phosphorothioate), (R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



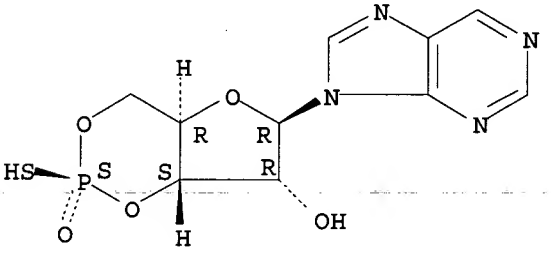
RN 120912-54-1 HCAPLUS
CN 1H-Benzimidazole, 5,6-dichloro-1-[3,5-O-[(S)-mercaptophosphinylidene]-β-D-ribofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



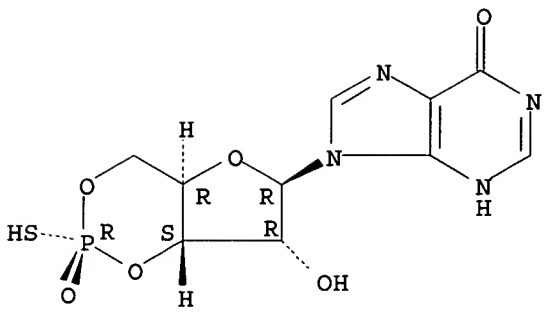
RN 120912-55-2 HCAPLUS
CN 9H-Purine, 9-[3,5-O-(mercaptophosphinylidene)-β-D-ribofuranosyl]-, (S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



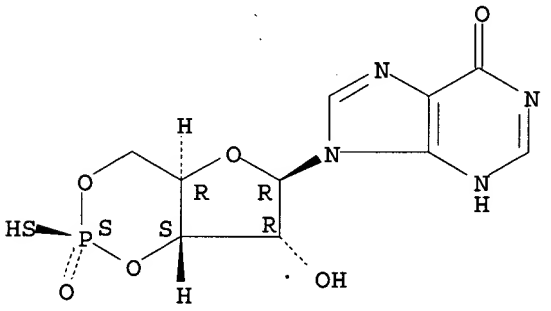
RN 124844-90-2 HCAPLUS
CN Inosine, cyclic 3',5'-(hydrogen phosphorothioate), (R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



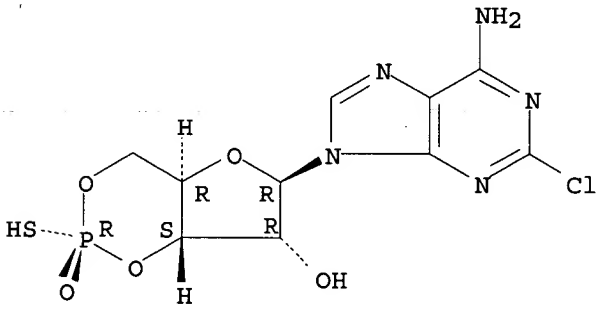
RN 124844-91-3 HCAPLUS
CN Inosine, cyclic 3',5'-(hydrogen phosphorothioate), (S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



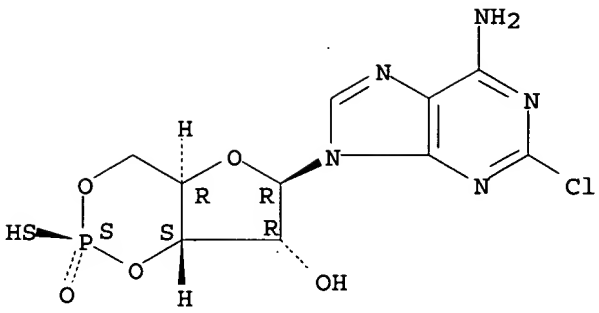
RN 124844-92-4 HCAPLUS
CN Adenosine, 2-chloro-, cyclic 3',5'-[(R)-hydrogen phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



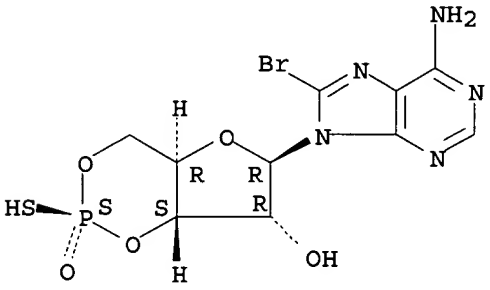
RN 124854-63-3 HCAPLUS
CN Adenosine, 2-chloro-, cyclic 3',5'-[(S)-hydrogen phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



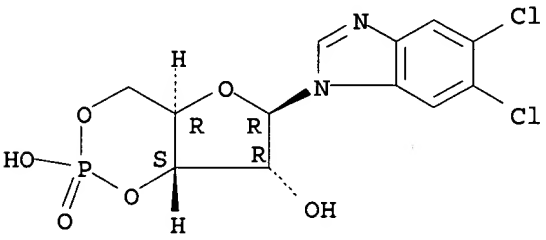
RN 127634-20-2 HCAPLUS
CN Adenosine, 8-bromo-, cyclic 3',5'-[hydrogen (S)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



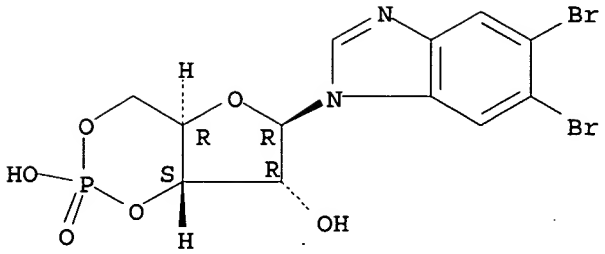
RN 129693-10-3 HCAPLUS
CN 1H-Benzimidazole, 5,6-dichloro-1-(3,5-O-phosphinico-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



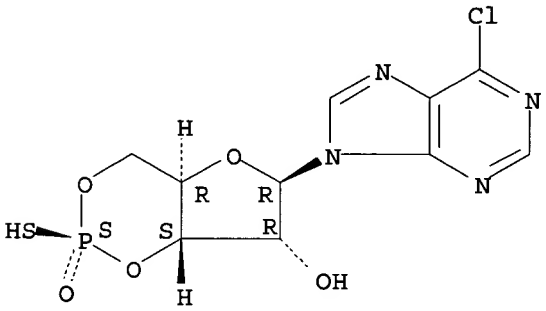
RN 129693-11-4 HCAPLUS
CN 1H-Benzimidazole, 5,6-dibromo-1-(3,5-O-phosphinico-β-D-ribofuranosyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



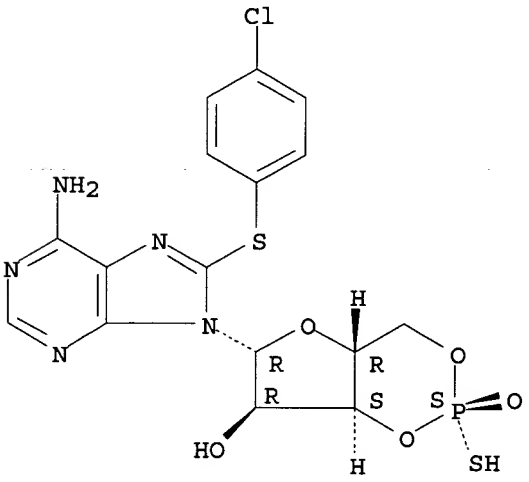
RN 129693-12-5 HCAPLUS
CN 9H-Purine, 6-chloro-9-[3,5-O-(mercaptophosphinylidene)-β-D-ribofuranosyl]-, (S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



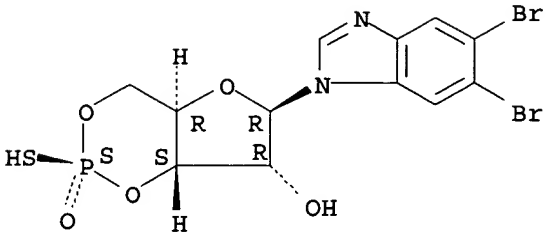
RN 129693-13-6 HCAPLUS
CN Adenosine, 8-[(4-chlorophenyl)thio]-, cyclic 3',5'-[hydrogen (S)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



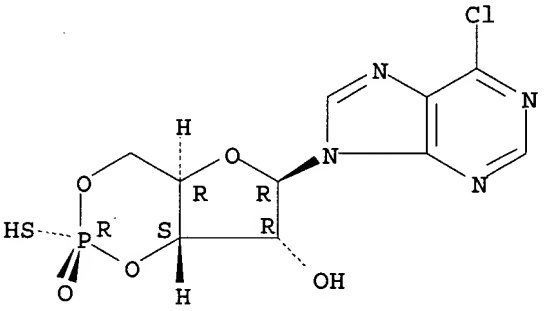
RN 129693-14-7 HCAPLUS
CN 1H-Benzimidazole, 5,6-dibromo-1-[3,5-O-[(S)-mercaptophosphinylidene]-β-D-ribofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



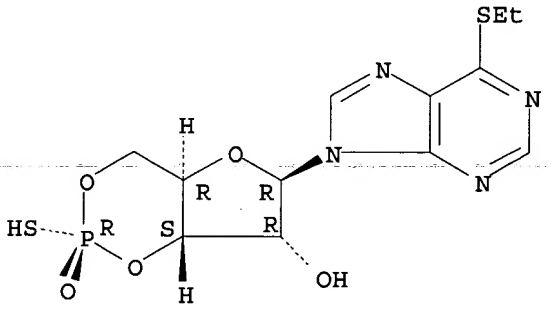
RN 129693-15-8 HCAPLUS
CN 9H-Purine, 6-chloro-9-[3,5-O-(mercaptophosphinylidene)-β-D-ribofuranosyl]-, (R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



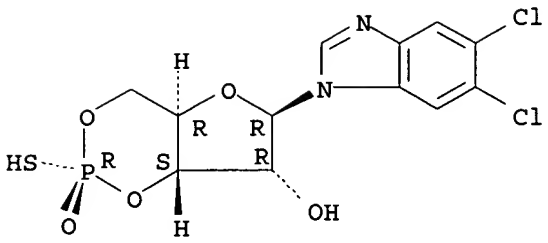
RN 129693-16-9 HCAPLUS
CN Inosine, 6-S-ethyl-6-thio-, cyclic 3',5'-(hydrogen phosphorothioate), (R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



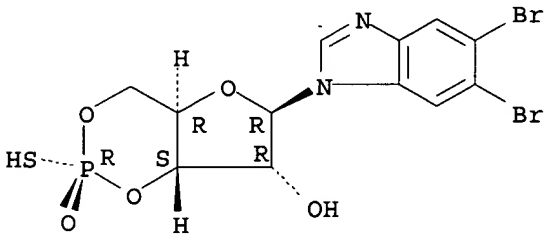
RN 129693-17-0 HCAPLUS
CN 1H-Benzimidazole, 5,6-dichloro-1-[3,5-O-[(R)-mercaptophosphinylidene]-β-D-ribofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



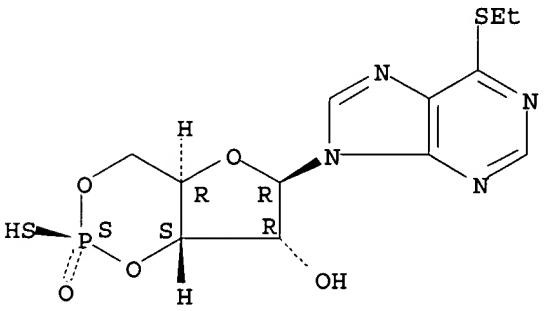
RN 129693-18-1 HCAPLUS
CN 1H-Benzimidazole, 5,6-dibromo-1-[3,5-O-[(R)-mercaptophosphinylidene]-β-D-ribofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



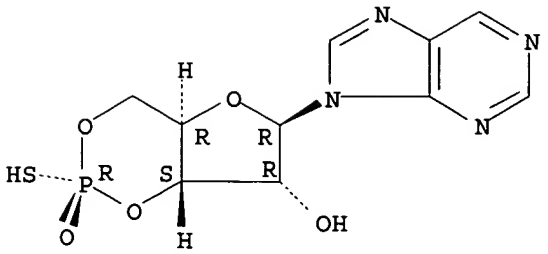
RN 129715-89-5 HCAPLUS
CN Inosine, 6-S-ethyl-6-thio-, cyclic 3',5'-(hydrogen phosphorothioate), (S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



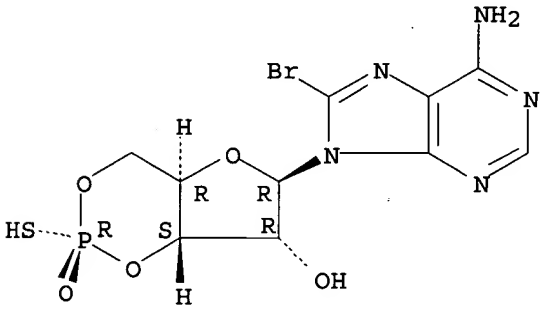
RN 129734-99-2 HCAPLUS
CN 9H-Purine, 9-[3,5-O-(mercaptophosphinylidene)-β-D-ribofuranosyl]-, (R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



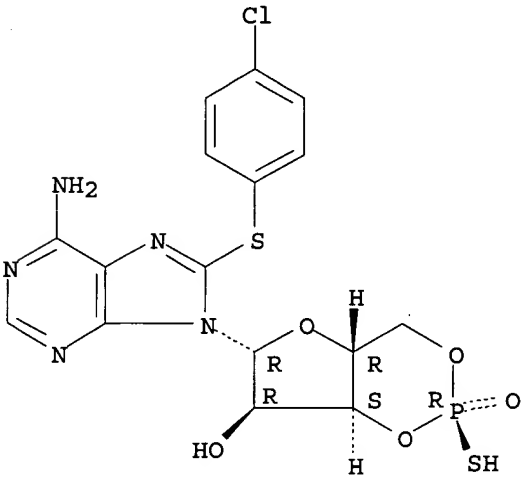
RN 129735-00-8 HCAPLUS
CN Adenosine, 8-bromo-, cyclic 3',5'-[hydrogen [P(R)]-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 129735-01-9 HCAPLUS
CN Adenosine, 8-[(4-chlorophenyl)thio]-, cyclic 3',5'-[hydrogen (R)-phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



STIC SEARCH RESULTS FEEDBACK FORM

Biotech-Chem Library

Questions about the scope or the results of the search? Contact ***the searcher or contact***:

Mary Hale, Information Branch Supervisor
Remsen Bldg. 01 D86
571-272-2507

Voluntary Results Feedback Form

- *I am an examiner in Workgroup:* ☐ *Example: 1610*
- *Relevant prior art **found**, search results used as follows:*
  - ☐ 102 rejection
  - ☐ 103 rejection
  - ☐ Cited as being of interest.
  - ☐ Helped examiner better understand the invention.
  - ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
  (journal articles, conference proceedings, new product announcements etc.)

- *Relevant prior art **not found:***
  - ☐ Results verified the lack of relevant prior art (helped determine patentability).
  - ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

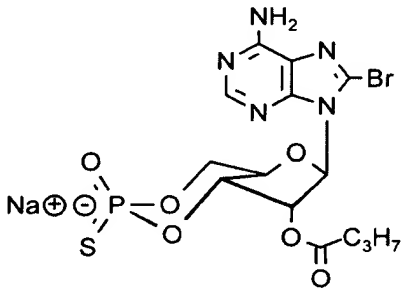
Drop off or send completed forms to STIC-Biotech-Chem Library, Remsen Bldg.

BIOLOG - *LIFE SCIENCE INSTITUTE* -

Technical Information about Rp-8-Br-2'-O-Monobutyryl-cAMPS

Lipophilic, metabolically activated precursor of the PDE-resistant protein kinase A inhibitor Rp-8-Br-cAMPS

Update: November 30, 2003



Abbreviation: **Rp-8-Br-MB-cAMPS**

Formula	CAS No.	Molecular Weight	UV	BIOLOG Cat. No.
$C_{14}H_{16}BrN_5O_6PS.Na$	[pending]	516.2	λ_{max} 264 nm / ε 17000 / pH7	B 010

Name: 8- Bromo- 2'- O- monobutyryladenosine- 3', 5'- cyclic monophosphate, Rp- isomer

Description: Rp-8-Br-MB-cAMPS is an analog of the parent compound cyclic AMP where the hydrogen in position 8 of the nucleobase is replaced by bromine. In addition, the equatorial one of the two exocyclic oxygen atoms in the cyclic phosphate moiety is modified by sulfur. The suffix "p" indicates that R/S nomenclature refers to phosphorus. The 2'- ribose hydroxyl group has been esterified by butyyric acid.

Legal information: Protected under patent DE 3802865.4 licensed to BIOLOG LSI

Properties: Rp-8-Br-MB-cAMPS is a lipophilic precursor of the cyclic AMP antagonist Rp-8-Br-cAMPS (Cat. No.: B 001). The butyryl group masks the polar 2' hydroxyl group and facilitate membrane permeability. During metabolic activation by intracellular esterases the inhibitor and butyrate are released. As observed with dibutyryl cAMP, release of butyrate can already start in the medium if it contains serum esterases. Please note that butyrate can have its own biochemical effects, therefore a control experiment with sodium butyrate is necessary. Significantly more lipophilic and membrane permeant compared to Rp-8-Br-cAMPS. Detailed technical information and updated reference list as well as application data from published and unpublished experimental results are available for Rp-8-Br-cAMPS. Both, Rp-8-Br-MB-cAMPS and the released Rp-8-Br-cAMPS are resistant towards mammalian cyclic nucleotide-dependent phosphodiesterases.

Specification: Lyophilized or crystallized sodium salt. Other salt forms are available upon request. Equal amounts of Rp-8-Br-MB-cAMPS can appear very different in volume due to sensitivity of the lyophilized form to humidity and the compound can even contract to small volume droplets. Normally the product is located in the conical bottom of the tube. Micromolar quantities are determined by UV at λ_{max}.